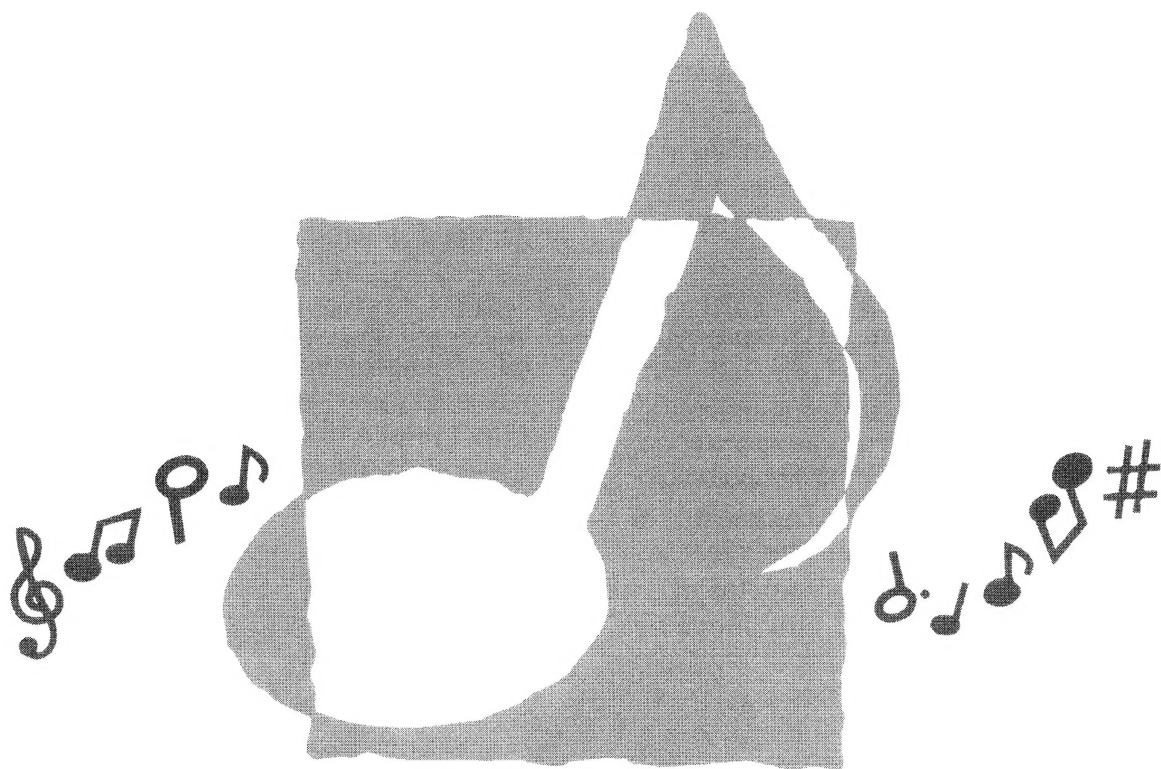# CELVIANO AP-60R AP-65R

## USER'S GUIDE
## GUÍA DEL USUARIO

**CASIO**®

# IMPORTANT SAFETY INSTRUCTIONS

**"INSTRUCTIONS PERTAINING TO A RISK OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS"**

**WARNING** – When using electric products, basic precautions should always be followed, including the following:

1. Read all the instructions before using the products.

2. To reduce the risk of injury, close supervision is necessary when a product is used near children.

3. Do not use this product near water – for example, near a bathtub, washbowl, kitchen sink, in a wet basement, or near a swimming pool, or the like.

4. This product should be used only with a stand that is recommended by the manufacturer.

5. This product, either alone or in combination with an amplifier and headphones or speakers, may be capable of producing sound levels that could cause permanent hearing loss. Do not operate for a long period of time at a high volume level or at a level that is uncomfortable. If you experience any hearing loss or ringing in the ears, you should consult an audiologist.

6. The product should be located so that its location or position does not interfere with its proper ventilation.

7. The product should be located away from heat sources such as radiators, heat registers, or other products that produce heat.

8. This product may be equipped with a polarized line plug. This is a safety feature. If you are unable to insert the plug into the outlet, contact an electrician to replace your obsolete outlet. Do not defeat the safety purpose of the plug.

9. Unplug this apparatus during lightning storms or when unused for long periods of time.

10. Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.

11. The product should be serviced by qualified service personnel when:

    A. The power-supply cord or the plug has been damaged; or

    B. Objects have fallen, or liquid has been spilled into the product; or

    C. The product has been exposed to rain; or

    D. The product does not appear to operate normally or exhibits a marked change in performance; or

    E. The product has been dropped, or the enclosure damaged.

12. Do not attempt to service the product beyond that described in the user - maintenance instructions. All other servicing should be referred to qualified service personnel.

13. Clean only with a damp cloth.

14. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.

## SAVE THESE INSTRUCTIONS

# GROUNDING INSTRUCTIONS

This product must be grounded. If it should malfunction or break down, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This product is equipped with a cord having an equipment - grounding conductor and a grounding plug. The plug must be plugged into an appropriate outlet that is properly installed and grounded in accordance with all local codes and ordinances.

**DANGER** – Improper connection of the equipment - grounding conductor can result in risk of electric shock. Check with a qualified electrician or serviceman if you are in doubt as to whether the product is properly grounded. Do not modify the plug provided with the product – if it will not fit the outlet, have a proper outlet installed by a qualified electrician.

# NOTICE

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

# FCC WARNING

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
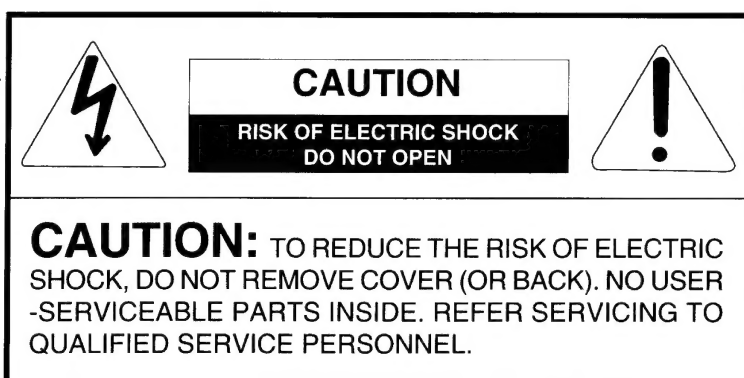
TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, REFER SERVICING TO QUALIF SERVICE PERSONNEL.

# Introduction

Congratulations on your selection of the CASIO Digital Piano. This piano is a sophisticated musical instrument that blends the very best of traditional piano feel and sound quality with the latest that modern electronics technology has to offer.
Before using the piano, be sure to carefully read through the instructions contained in this manual.

Please keep all information for future reference.

# Safety Precautions

## Symbols

Various symbols are used in this user's guide and on the product itself to ensure that the product is used safely and correctly, and to prevent injury to the user and other persons as well as damage to property. Those symbols along with their meanings are shown below.

### ⚠ WARNING

This indication stipulates matters that have the risk of causing death or serious injury if the product is operated incorrectly while ignoring this indication.

### ⚠ CAUTION

This indication stipulates matters that have the risk of causing injury as well as matters for which there is the likelihood of occurrence of physical damage only if the product is operated incorrectly while ignoring this indication.

## Symbol Examples

This triangle symbol ( △ ) means that the user should be careful. (The example at left indicates electrical shock caution.)

This circle with a line through it ( ⊘ ) means that the indicated action must not be performed. Indications within or nearby this symbol are specifically prohibited. (The example at left indicates that disassembly is prohibited.)

The black dot ( ● ) means that the indicated action must be performed. Indications within this symbol are actions that are specifically instructed to be performed. (The example at left indicates that the power plug must be unplugged from the electrical socket.)

## ⚠ WARNING

### Power source and voltage.

• Make sure that the power source you are using matches the rating marked on the instrument itself. Improper power can create the danger of fire or serious electrical shock.

### Power cord handling.

• If the power cord should become damaged (exposed wires, disconnection, etc.), request replacement from your retailer or an authorized service provider. You will be charged for this replacement. Use of a damaged power cord may cause fire or electrical shock.
• Do not cut or damage the power cord. Also do not place heavy objects on top of it or subject it to excessive heat. Damage to the power cord may cause fire or electrical shock.
• Do not attempt to shape the power cord or subject it to excessive bending, twisting or pulling. This may cause fire or electrical shock.
• Use only the electrical cord that comes with the instrument. Use of another type of power cord can cause its insulation to melt or otherwise damage the cord, creating the danger of fire or electrical shock.

### Do not locate the instrument or its stand on an uneven or unstable surface.

• Locating the instrument or its stand on an uneven or unstable surface can cause it to fall, creating the danger of personal injury. When using the stand that comes with the unit, be sure that all screws are securely tightened.

### Do not place containers containing water or other liquids on the instrument.

• Do not place the following objects on the instrument. Placing such objects on the instrument may cause fire or electrical shock if they spill and get inside the instrument.
  • Containers filled with water or other liquids (including vases, potted plants, cups, cosmetics and medicines)

- Small metal objects (including hair-pins, sewing needles and coins)
- Flammable objects

In the event a foreign object should happen to get inside the instrument, please take the following actions:

1. Turn off power.
2. Unplug the power cord from the wall outlet.
3. Consult with the dealer where you purchased the instrument or with an authorized CASIO service provider.

### Do not disassemble or modify the instrument.

- Never attempt of take apart or modify the instrument, its accessories, or separately sold options. Doing so may cause fire, electrical shock or malfunction. Consult your dealer concerning all inspection, adjustment or repair of internal components.

### Do not use the instrument if there is an abnormality or malfunction.

- Do not use the instrument if there appear to be abnormalities such as the presence of smoke or abnormal odor. Also do not use the instrument if there appear to be malfunctions such as power not coming on or sound not being produced. Use under such conditions may cause fire or electrical shock. In such cases, take the following actions immediately. Never attempt to repair the instrument yourself.

1. Turn off power.
2. Unplug the power cord from the wall outlet.
3. Consult with the dealer where you purchased the instrument or with an authorized CASIO service provider.

### When the instrument has been dropped:

- In the case the instrument has been dropped or damaged, take the following actions. Continued use may cause fire or electrical shock.

1. Turn off power.
2. Unplug the power cord from the wall outlet.
3. Consult with the dealer where you purchased the instrument or with an authorized CASIO service provider.

### Opening and closing the keyboard cover.

- Make sure the keyboard cover is fully open when using the instrument. To close the cover, hold it with your hand and gently lower it into place. Take care to avoid injury to your fingers when opening and closing the cover.

### Keep plastic bags out of the reach of small children.

- Never allow anyone to place the plastic bags of the instrument, its accessories, and its separately sold options over their heads. Doing so may cause suffocation. Particular caution is required in homes with small children.

# ⚠ CAUTION

## Power cord and plug

- Do not locate the power cord in close proximity to heaters or other heating appliances. This may cause the cord to melt leading to possible fire or electrical shock.
- When unplugging the power cord from an electrical outlet, always make sure to pull on the plug itself and not the cord. Pulling excessively on the cord may cause it to be damaged or break leading to possible fire or electrical shock.
- Do not touch the plug with wet hands when it is plugged in. This may cause electrical shock.
- When not using the instrument for a long period such as when traveling, always make sure to unplug the power cord from the electrical outlet for safety reasons.
- After use turn off the power switch of the instrument and unplug the power cord from the electrical outlet.

## Transport

- Take the following actions before moving the instrument. Remember that damage to the power cord can create the danger of fire or electrical shock.
  1. Unplug the power cord.
  2. Disconnect the pedal cable and other connecting cables.

## Cleaning

- Before cleaning the instrument, make sure to first unplug the power cord from the electrical outlet.

## Location

- Never locate the instrument in areas subject to high humidity or heavy accumulation of dust. Doing so may cause fire or electrical shock.
- Never locate the instrument in areas subject to grease splatters or steam, such as in a kitchen or near a humidifier. Doing so may cause fire or electrical shock.

## Do not place the instrument on lacquered furniture.

- The instrument's silicone rubber feet may eventually blacken or scar lacquered surfaces. Use felt cloth pads to insulate the feet.

## Do not place heavy objects on the instrument.

- Do not place heavy objects on the instrument. This may cause the instrument to tip over or break resulting in injury.

## Volume

- Very high volume levels can damage hearing. Avoid using the instrument at very high volume settings for long periods. Consult with a physician immediately if you experience impaired hearing or ringing in the ears.

## Do not get onto the instrument or stand.

- Do not crawl on top of the instrument or its stand. Particular caution is required in homes having small children. This may cause the instrument or stand to tip over and break resulting in injury.

## About the stand.

- Keep the butterfly bolts that anchor the instrument to the stand securely tightened. Dropping the instrument can damage it or cause it to malfunction. When placing the instrument onto the stand, be careful that you do not pinch your hand between the instrument and stand. The instrument is quite heavy, so it should be moved or placed on the stand by at least two people.
- Changes in temperature and humidity can cause stand screws to become loose. This means you should occasionally check the tightness of all screws. Retighten loose screws as soon as you discover them. Dropping the instrument can result in injury.

**Liquid Crystal Display (LCD) Precautions**

• Avoid subjecting the piano's LCD to strong impact, which can crack or break the LCD's glass creating the danger of personal injury.

• Should the LCD glass ever crack or break, do not allow the liquid inside the LCD to come into contact with your skin, which can cause inflammation and reddening.

  *Should the LCD liquid get into your mouth, immediately wash out your mouth with water and then consult a physician.

  *Should the LCD liquid get in your eyes or on your skin, immediately flush with water for at least 15 minutes and then consult a physician.

# Operational Precautions

## Locating the Unit

Avoid the following locations.
- Areas exposed to direct sunlight and high humidity.
- Areas subjected to very low temperatures.
- Near a radio, TV, video deck, or tuner (unit can cause interference with audio or video signals)

## Care of the Unit

- Never use benzene, alcohol, thinner or other such chemicals to clean the exterior of the unit.
- To clean the keyboard, use a soft cloth dampened with a weak solution of a mild neutral detergent and water. Wring out all excess moisture from the cloth before wiping.
- Severe impact can cause problems.
  When transporting the piano, use soft cloth to pack around the keyboard and buttons to protect them against damage.
- Never try to repair or modify any part of the piano.
  Any attempt to repair or modify the piano can cause problems with operation.
- Avoid using this piano near televisions, radios, etc.
  Because this piano uses digital circuitry, it may cause interference with other electronic devices such as televisions, radios, etc.
- In case of a problem, check that buttons and connections are correct, as indicated in this manual. If the piano still does not work properly, contact your retailer or a nearby dealer. Never try to repair the piano yourself.

## Lithium Battery

This unit is equipped with a lithium battery to provide power needed to retain memory contents while unit power is turned off. Should the lithium battery go dead, all memory contents will be lost whenever you turn unit power off. The normal life of the lithium battery is five years from the time that the battery was installed. Be sure to periodically contact your retailer or authorized service provider to have the lithium battery replaced. Note that you will be charged separately for lithium battery replacement.

- Note that CASIO COMPUTER CO., LTD. shall not be held liable for any damages or losses or any claims by third parties arising from corruption or loss of data caused by malfunction or repair of the unit, or from battery replacement.

You may notice lines in the finish of the case of this piano. These lines are the result of the molding process used to shape the plastic of the case. They are not cracks or breaks in the plastic, and are no cause for concern.

# Main Features

## ❏ Song Sequencer

A built-in six-track sequencer gives you full control over the tone, volume, pan position, and other parameters for each recorded track. Used in combination with Auto Accompaniment, the Song Sequencer provides you with all the tools you need to create your own full-fledged ensembles.

## ❏ Pattern Sequencer

Alter any of the 72 built-in rhythm patterns to create your own, original patterns. You can even store up to 6 of your patterns in memory for later recall.

## ❏ 78 rhythms

72 preset rhythms including rock, pops, jazz, and much more are at your fingertips. You can store up to 6 of your own rhythm patterns in memory for later recall.

## ❏ Auto Accompaniment

Simply play a chord and the corresponding rhythm, bass, and chords parts play along automatically. One Touch Presets instantly recalls the most suitable tone and tempo settings to match the rhythm you are using.

## ❏ 232 realistic tones

A simple operation selects one of 32 TONE button tones, including grand piano, pipe organ, and much more. 200 additional tones (128 General MIDI tones + 64 variations + 8 drums) are available in the Mixer Mode.

## ❏ General MIDI compatibility

General MIDI compatible tones let you connect to a personal computer for quick and easy "desktop music" capabilities, which means you can use the piano as a desktop music input device or sound source.

## ❏ Mixer

You can specify tone, volume, pan position, and other parameters for each built-in Auto Accompaniment part and each track recorded with the Pattern Sequencer or Song Sequencer. You can also control the same parameters for each channel during MIDI input.

## ❏ Registration Memory

Piano setups can be stored in memory for later recall and instant settings whenever you need them. Up to 20 setups (5 setups x 4 banks) can be stored in registration memory.

## ❏ Digital Effects

10 digital effects such as reverb and chorus come built in.

## ❏ Built-in floppy disk drive

Save original rhythms, or songs you created with the Song Sequencer to disk for long-term storage. You can also load a disk with a standard MIDI file (SMF) and play it back on the piano.

# Contents

## Basic Operations

## Advanced Operations

## Reference

## MIDI Implementation Chart

# General Guide

- Key, button, and other names are indicated in the text of this manual using bold type.
- See page E-83 for details on the stand.

## Back Panel

MIDI Terminals

LINE OUT Jacks

LINE IN Jacks

AC Power Jack∗

## Bottom

Headphone Jack

## Front

Power Indicator

CHORD name

Percussion instrument indicators

660A-E-014
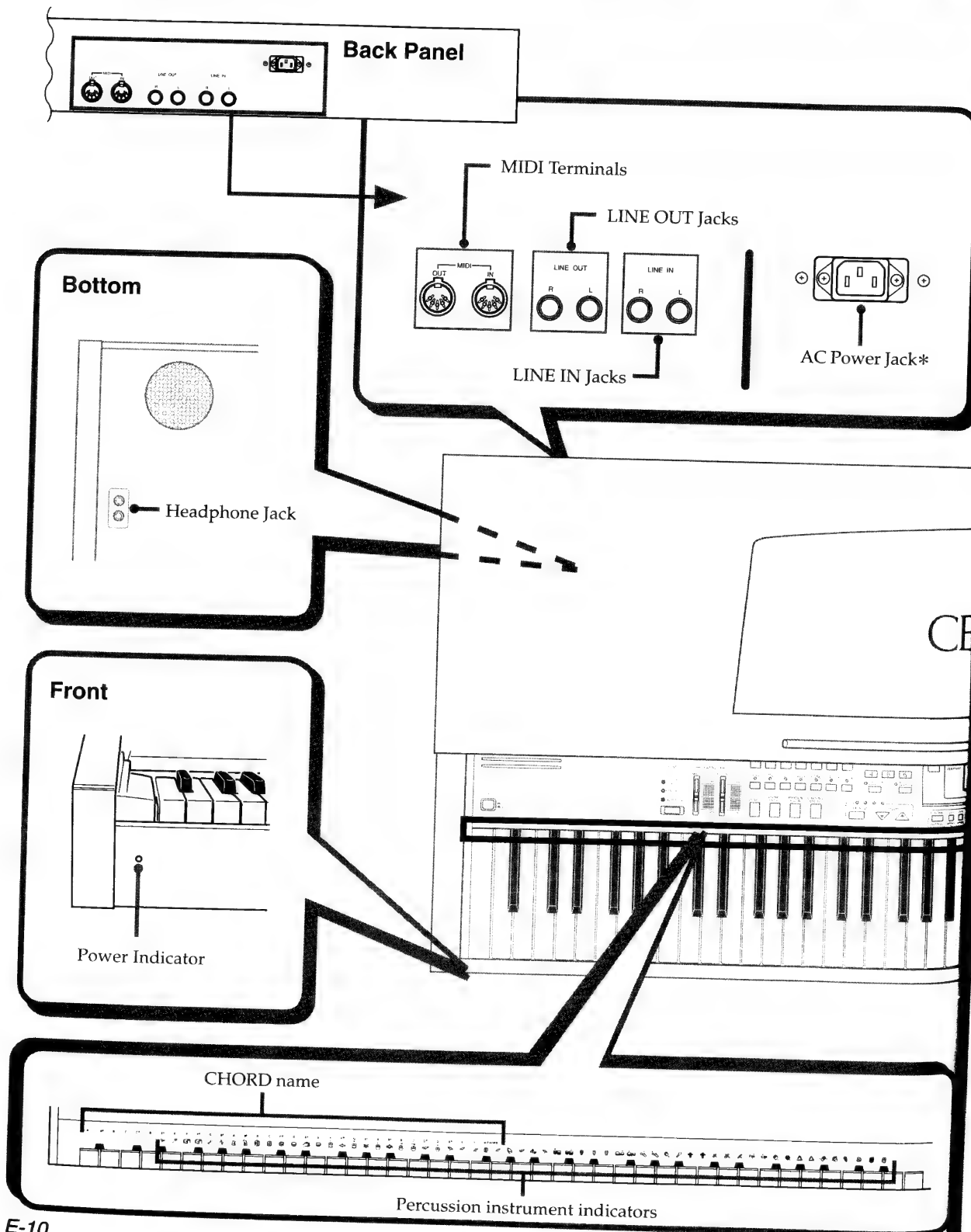
⚠ **CAUTION** Make sure that the cover of the piano is fully open whenever you are playing on the keyboard. A partially open cover can suddenly close unexpectedly and pinch your fingers.

∗With some CELVIANO models, the power cord is hard-wired to the back of the instrument.

## Raising the Score Stand
Use the procedure illustrated below to raise the music stand.

Stopper

Lower the flap so it rests inside the raised edge of the stopper.

Back

Appearance when raised
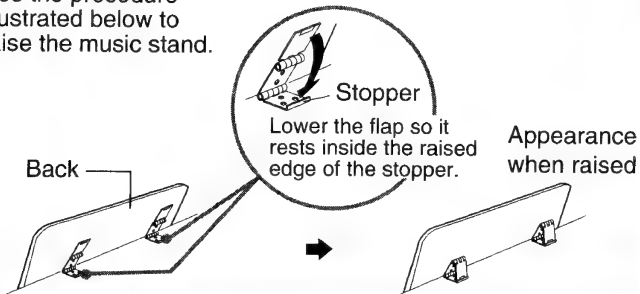
## Bottom

Pedal Connector

Е⌐NO

Score Stand

Access lamp

Eject button

### Note Names

C D E F G A B C
(H)
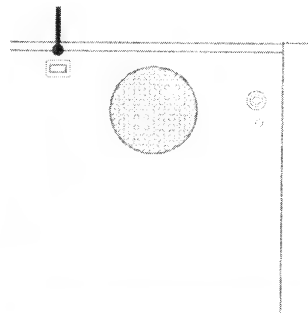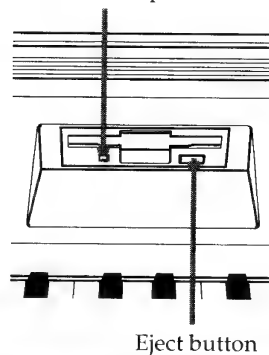
A value next to a note name indicates the relative position of the note on the keyboard as shown below.

C1   C2   C3   C4   C5   C6   C7   C8
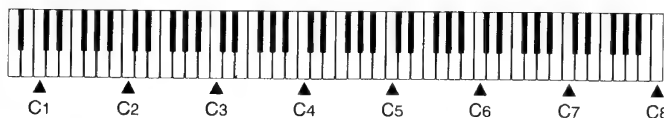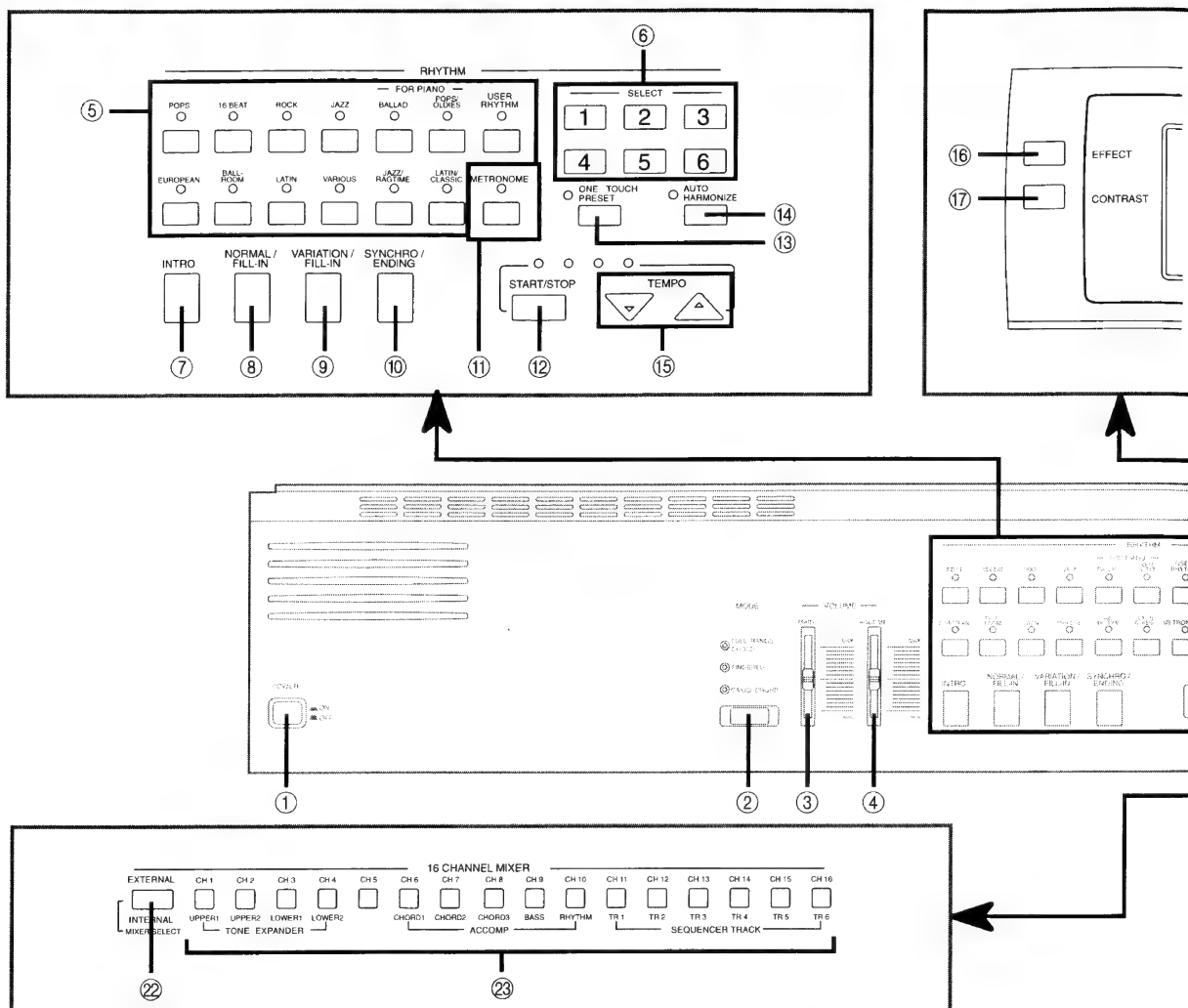
① POWER button
② MODE button
③ MAIN VOLUME slider
④ ACCOMP VOLUME slider
⑤ RHYTHM buttons
⑥ RHYTHM SELECT buttons
⑦ INTRO button
⑧ NORMAL/FILL-IN button
⑨ VARIATION/FILL-IN button
⑩ SYNCHRO/ENDING button
⑪ METRONOME button
⑫ START/STOP button
⑬ ONE TOUCH PRESET button
⑭ AUTO HARMONIZE button

⑮ TEMPO buttons
⑯ EFFECT button
⑰ CONTRAST button
⑱ Display
⑲ LAYER button
⑳ SPLIT button
㉑ TRANSPOSE buttons
㉒ MIXER SELECT button
㉓ CHANNEL buttons (CH1 to CH16)
㉔ TONE SELECT button
㉕ TONE buttons
㉖ BANK button
㉗ REGISTRATION buttons (A to E)
㉘ STORE button
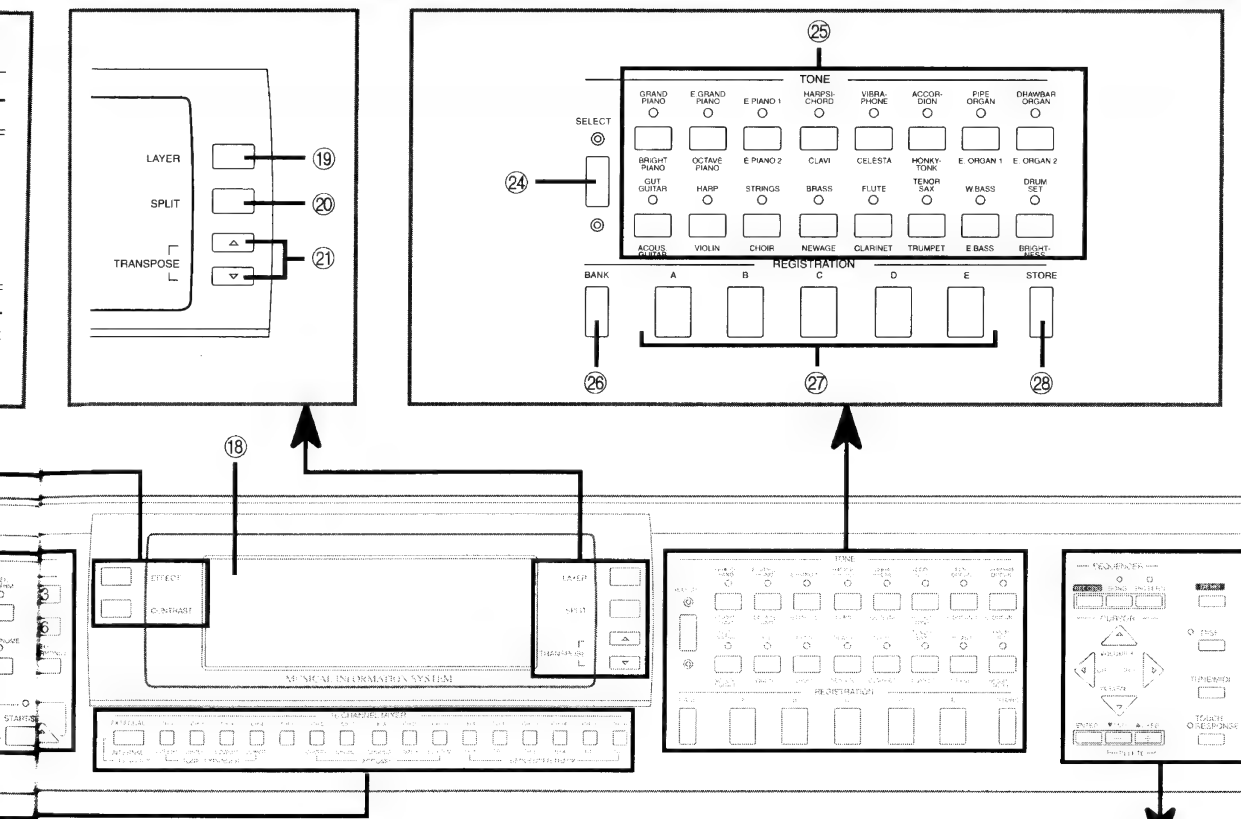
## ※ Playing a Demo Tune

Pressing the DEMO button starts demo tune play. There are twelve demo tunes, which continuously play in sequence. To stop demo tune play, press either the DEMO button or the START/STOP button.

### ∎ NOTES ∎

- Pressing the [+]/[−] buttons skips to the next demo tune.
- You can select a tone for the keyboard (page E-20) before starting demo tune play, and then use that tone to play along with the demo tune.
- MIDI are disabled while a demo tune is playing.
- Auto Harmonize, layer, split, and Auto Accompaniment Mode settings are automatically cancelled whenever demo tune is playing. These settings are restored after demo tune play is complete.
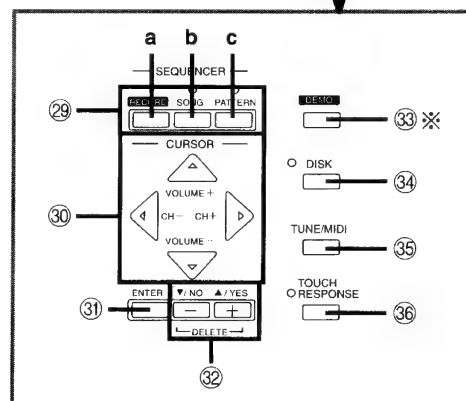
㉙ SEQUENCER
  (a) RECORD button
  (b) SONG button
  (c) PATTERN button
㉚ CURSOR keys
  In this User's Guide, CURSOR keys operations are indicated as: [ ◀ ], [ ▶ ], [▲], [▼].

㉛ ENTER button
㉜ [+]/[−] buttons (YES/NO buttons)
㉝ DEMO button
㉞ DISK button
㉟ TUNE/MIDI button
㊱ TOUCH RESPONSE button

## About the Display
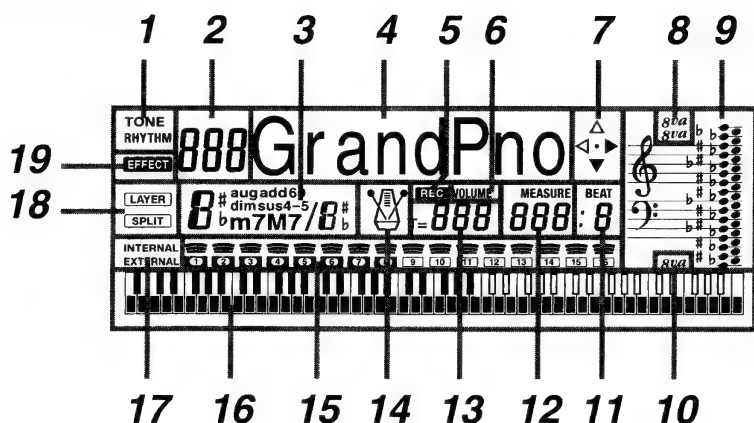


**1** TONE/RHYTHM indicator
TONE is shown during tone selection and display, while RHYTHM is shown during rhythm selection and display.

**2** Rhythm/Mixer tone number
Number of currently selected rhythm. Number of currently selected tone (Mixer tone). This display area also shows other information when you are using the Pattern Sequencer and Song Sequencer.

**3** Chord name display
Shows chord names while Auto Accompaniment is being used.

**4** Tone/Rhythm name
Name of currently selected tone or rhythm. The TONE/RHYTHM indicator shows whether the name is a tone or rhythm. This area also shows other information in other modes.

**5** Record indicator
While the Song Sequencer or Pattern Sequencer is turned on, this indicator flashes to indicate record standby and remains on the display without flashing while recording is in progress.

**6** VOLUME indicator
Appears when you are using the Mixer to change the volume parameter of a specific channel.

**7** CURSOR key indicators
Indicated keys are those that are operational for the function you are currently performing.

**8** Octave symbol 1
One symbol indicates the note being produced by the keyboard is one octave higher than the note shown in the staff notation area **9**. Two symbols indicate two octaves higher.

**9** Staff notation area
Notes you play on the keyboard, notes played back from memory, chord forms, and received MIDI data are shown here.

**10** Octave symbol 2
One symbol indicates the note being produced by the keyboard is one octave lower than the note shown in the staff notation area **9**.

**11** Beat number
Shows the beat number during rhythm and Auto Accompaniment play, and while the Song Sequencer or Pattern Sequencer is turned on. This display area also shows other information in other modes.

**12** Measure
Shows the measure number from the start of play during rhythm and Auto Accompaniment play, and while the Song Sequencer or Pattern Sequencer is turned on.

**13** Tempo indicator

Shows the tempo as a value indicating the number of beats per minute during rhythm and Auto Accompaniment play, and while the Song Sequencer or Pattern Sequencer is turned on. This display area also shows other information in other modes.

**14** Metronome

You can turn on the metronome to provide a reference beat for your keyboard play.

**15** Level meter

The numbers 1 through 16 correspond to Mixer channels. This level meter indicates the on/off status of each channel, and other information.

**16** Graphic keyboard

Notes you play on the keyboard, notes played back from memory, and received MIDI data are indicated on the graphic keyboard.

**17** Mixer mode indicator

Indicates the current Mixer mode (Internal, External).

**18** LAYER/SPLIT indicator

Appear while layer and/or split are being used.

**19** EFFECT indicator

Appears when a digital effect is turned on.

**▌NOTES ▌**
- Display examples shown in this User's Guide are intended for illustrative purposes only. The actual text and values that appear on the display may differ from the examples shown here.
- Backlight brightness may appear somewhat unstable immediately after the piano is turned on. This does not indicate malfunction, and brightness will stabilize after a few seconds.

The back lighting of the display is provided by a fluorescent lamp, which loses its brightness over very long periods of use. When this happens, contact your original dealer or a CASIO service provider about having the backlight replaced. Note that you will be charged for such replacement.

## Adjusting Display Contrast

- Display contrast can be adjust to one of 100 levels for easy viewing.
- Adjusting display contrast helps to make figures easier to read from any viewing angle.
- Within seven seconds after pressing the CONTRAST button, press the [+] button to increase the contrast value (making the display darker) or the [–] button to decrease it (making the display lighter).
- After you release the CONTRAST button, the message "Contrast" remains on the display for a few moments, during which you can change the contrast setting further using the [+] button and the [–] button.
  The contrast can be set to a value from 0 to 99. The initial default setting is 50.

# Connecting to a Power Outlet

You can power this piano by plugging it into a standard household power outlet. Be sure you turn off power whenever the piano is not in use.

## To connect to a power outlet

1. Check to make sure that the piano's **POWER button** is in the OFF position. If it is ON, press the **POWER button** to turn it OFF.

POWER button

**CASIO**

ON ▬
Power indicator on.

OFF ▬
Power indicator off.
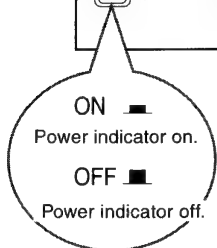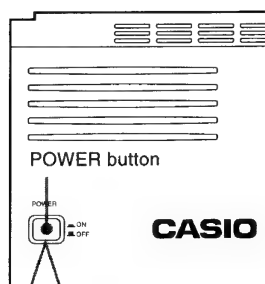
**Front**
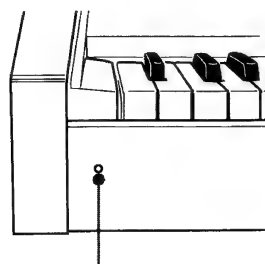
Power Indicator

2. Attach the power cord that comes with the piano to the back of the piano.
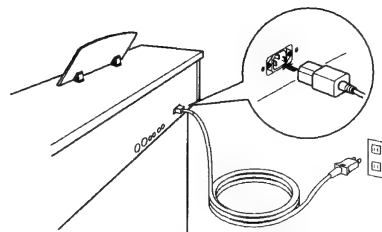
3. Plug the piano's power cord into a wall outlet.

4. Press the **POWER button** to turn on power.

=============== **IMPORTANT!** ===============

• Power should also be turned off before you unplug the piano from the wall outlet.
• The shapes of the piano's power cord and wall outlet should be different according to countries or regions. The illustrations are examples.
• With some CELVIANO models, the power cord is hard-wired to the back of the instrument.

## Settings and Memory Contents

The following describes what happens to settings and memory contents when power is turned off.

### Settings

When you turn off the piano by pressing the POWER button, it "remembers" the current settings for the following parameters. These settings remain in effect the next time you turn on the piano.

- Song Sequencer settings (song number, metronome, quantize)
- Pattern Sequencer settings (metronome, quantize)
- Contrast setting

### Memory Contents

In addition to the above settings, Registration, Song Sequencer, and Pattern Sequencer memory contents are also retained when power is turned off.

### Power Requirements

The piano comes with a built-in lithium battery that supplies power to the memory to retain Song Sequencer, Pattern Sequencer and other data while piano power is turned off. If the power of the lithium battery is low, turning off piano power can result in deletion of all data stored in its memory. The normal life of the original battery is five years from the time it is loaded at the factory. Due to time spent in transit and storage, the original battery probably will not provide a full five years of service life. It is up to you to contact your nearest CASIO service provider about having the lithium battery replaced periodically.
Note that you will be charged separately for lithium battery replacement.

To protect against loss of valuable memory data, we strongly suggest that you use either of the following methods to back it up.

- Perform a MIDI dump of the data to a computer or other external device for storage. See "Bulk Sending Piano Data" on page E-76 for details.
- Save the data to diskette. See "Using the Floppy Disk Drive" on page E-63 for details.

### To initialize the piano and delete all data

Use this procedure to return all piano settings to what they were when you purchased it. Note that this procedure clears all data from memory.

1. While holding down the **ENTER button**, turn on the piano.

```
Reset?
```

2. Press the **YES button** to initialize the piano or the **NO button** to turn on power without changing any settings.

# Connections

Connecting to an audio or musical instrument amplifier provides even clearer, more powerful sound through external speakers.

**Back**

**Bottom**

③ Audio amplifier AUX IN, etc.

PIN plug

LEFT (White)

RIGHT (Red)

MIDI
OUT    IN

LINE OUT    LINE IN

R    L

④ Guitar amplifier, keyboard amplifier, etc.

Standard jacks

Standard plugs

INPUT 1

INPUT 2

② Tape recorder, MIDI sound source

① Headphones
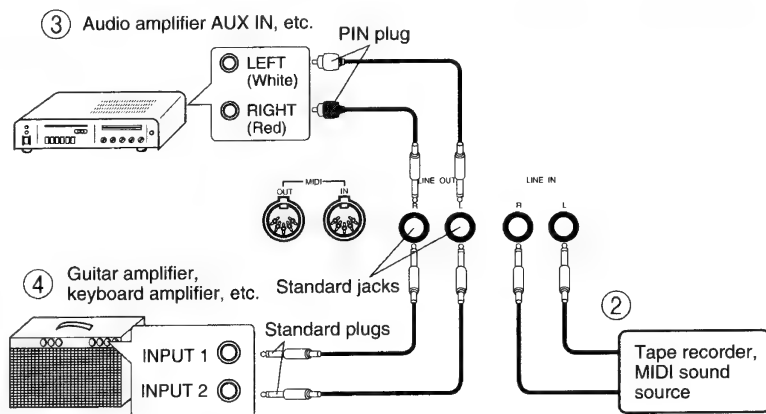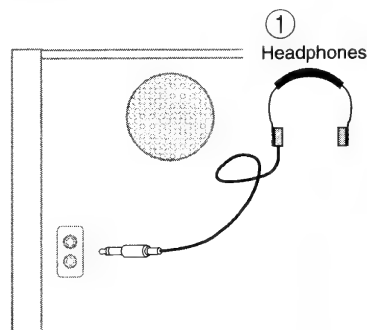
## === IMPORTANT! ===

- Whenever connecting external equipment, first set the MAIN VOLUME slider of the piano and the volume controller of the external equipment to relatively low volume settings. You can later adjust volume to the level you want after connections are complete.
- Be sure also to refer to the documentation that comes with the external equipment for its proper connection procedures.

## Connecting Headphones ①

Connect commercially available headphones to the piano's headphones jack. This cuts off the built-in speakers, which means you can practice even late at night without disturbing others. To protect your hearing, make sure that you do not set the volume level too high when using headphones.

## Playing External Equipment from the Piano ②

Use commercially available cables to connect the LINE OUT jacks of external equipment (MIDI sound source, tape recorder, etc.) to the piano's LINE IN jacks. It is up to you to purchase connecting cables that are compatible with the equipment you are connecting.

## Connecting to Audio Equipment ③

Use commercially available cords to connect to the two jack as shown in Figure ③. It is up to you to purchase connectin cables like the ones shown in the illustration for connection Normally in this configuration, you must set the audio equip ment's input selector to the setting that specifies the term nal (such as AUX IN) that the piano is connected to. Use th piano's MAIN VOLUME slider to adjust the volume level.

## Connecting to a Musical Instrument Amplifier ④

Use commercially available cords to connect to the two jack as shown in Figure ④. It is up to you to purchase connectin cables like the ones shown in the illustration for connection Use the piano's MAIN VOLUME slider to adjust the volum level.

* If your amplifier has only one input jack, use an adapte like the one shown below.

Standard plug

Standard jack

akers.

nes
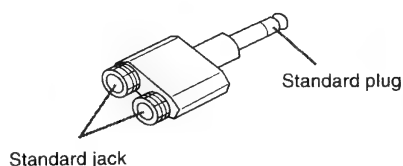
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# Basic
# Operations

MAIN VOLUME — LAYER — TONE SELECT — TONE

POWER

SPLIT
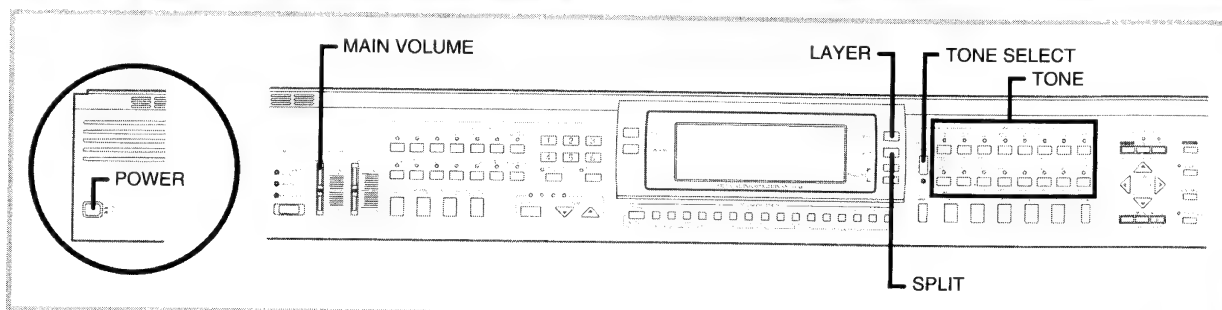
This section provides information on performing basic piano operations.

## Getting Started

### To play the piano

1. Press the **POWER button** to turn on the piano.

2. Use the **MAIN VOLUME slider** to set the volume to a relatively low level.

3. Play something on the keyboard.

## Selecting a Tone

This piano has two types of tones, one-touch "TONE button tones" and "mixer tones." The following procedure describes how to select TONE button tones only. See "Selecting a Mixer Tone" on page E-36 for information about mixer tones.

### To select a tone

1. Look at the **TONE buttons** and find the name of the tone you want to select.

2. Press the **TONE SELECT button** so either the top or bottom SELECT indicator is lit.
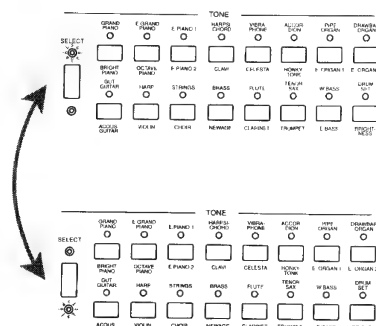
- Each press of the TONE SELECT button toggles between the upper indicator (tones marked above the buttons are selected) and lower indicator (tones marked below the buttons are selected).

3. Press the **TONE button** for the tone you want to select.
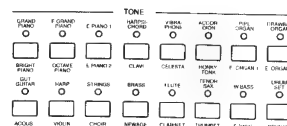
Example: To select "VIOLIN", press the TONE SELECT button until the lower SELECT indicator is lit, and then press the HARP/VIOLIN button.

TONE
EFFECT

# Violin

- The GRAND PIANO tone was recorded using stereo sampling.
- See "Selecting a Mixer Tone" on page E-36 for information about tones numbered 000 through 199.
- The tone number of a tone selected using the TONE buttons does not appear on the display.

## Polyphony

The term polyphony refers to the maximum number of notes you can play at the same time. This piano has 32-note polyphony, which includes the notes you play as well as the rhythms and auto-accompaniment patterns that are played by the piano. This means that when a rhythm or auto-accompaniment pattern is being played by the piano, the number of notes (polyphony) available for keyboard play is reduced. Also note that some of the tones provide only 16-note polyphony.

## Digital Sampling

A number of the tones that are available with this piano have been recorded and processed using a technique called digital sampling. To ensure a high level of tonal quality, samples are taken in the low, mid, and high ranges and then combined to provide you with sounds that are amazingly close to the originals. You may notice very slight differences in volume or sound quality for some tones when you play them at different positions on the keyboard. This is an unavoidable result of multiple sampling, and it is not a sign of malfunction.

## *Using Layer*

With layer you can assign two different tones (a main tone and a layered tone) to the keyboard, both of which play whenever you press a key.



◄——— Main tone (UPPER1) + Layered tone (UPPER2) ———►
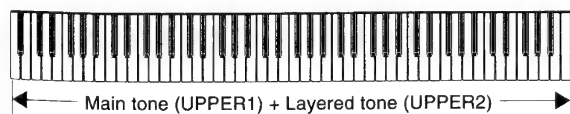
## To layer two tones

*1.* Select the main tone.

*2.* Press the **LAYER button** to turn on tone layering.
- This causes the "LAYER" indicator to appear on the display.
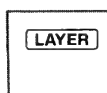
[ LAYER ]

- The layered tone name appears on the display for about seven seconds. During this time you can use the TONE buttons to change the layered tone if you want. After about seven seconds, the display changes to the main tone name.

*3.* Select the layered tone.

*4.* Now try playing something on the keyboard.
- Both tones are played at the same time.

*5.* Press the **LAYER button** again to unlayer the tones and return the keyboard to normal.
- This causes the "LAYER" indicator to disappear on the display.

■ NOTES ■
- Layering is produced by sounding Mixer internal mode CH 1 (UPPER1) and CH 2 (UPPER2) at the same time. This means you can use the Mixer to change the volume balance and stereo pan position parameters for both the main tone and layered tone. See "Mixer Function" on page E-39 for details.
- You can also use tones 000 through 199 with the Mixer as the main and layered tones. If layered tones (main tone and layered tone) are already selected with the Mixer, the tones become layered as soon as you press the LAYER button. See "Mixer Function" on page E-39 for details.

## *Using Split*

With split you can assign two different tones (a main tone and a split tone) to either end of the keyboard, which lets you play one tone with your left hand and another tone with your right hand.

Split point (F#3)



◄—— Split tone ——►◄——— Main tone ———►
(LOWER1)                    (UPPER1)
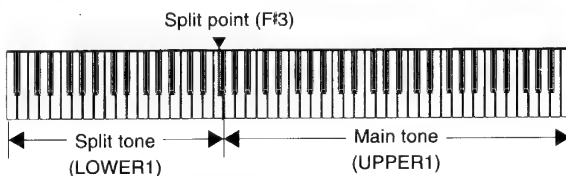
## To split the keyboard

*1.* Select the main tone.

*2.* Press the **SPLIT button**.
- This causes the "SPLIT" indicator to appear on the display.

[ SPLIT ]

LAYER
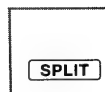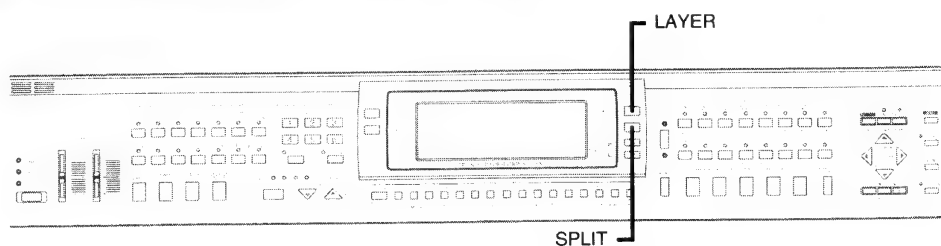
SPLIT

- The split tone name appears on the display for about seven seconds. During this time you can use the TONE buttons to change the split tone if you want. After about seven seconds, the display changes to the main tone name.

3. Select the split tone.

4. Now try playing something on the keyboard.
   - The lower range (left side) of the keyboard is assigned the split tone, while the upper range (right side) is assigned the main tone.
   - The location on the keyboard where the changeover between the two tones occurs is called the split point. See "To change the location of the split point" on this page for details on changing the location of the split point.

5. Press the **SPLIT button** again to unsplit the keyboard and return it to normal.
   - This causes the "SPLIT" indicator to disappear on the display.

**▌NOTES ▌**
- Split is produced by using Mixer internal mode CH 1 (UPPER1) and CH 3 (LOWER1) at the same time. This means you can use the Mixer to change the volume balance and stereo pan position parameters for both the main tone and split tone. See "Mixer Function" on page E-39 for details.
- You can also use tones 000 through 199 with the Mixer as the main and split tones. If split tones (main tone and split tone) are already selected with the Mixer, the keyboard is split between the two tones as soon as you press the SPLIT button. See "Mixer Function" on page E-39 for details.

### To change the location of the split point

While holding down the SPLIT button, press the keyboard key where you want the lowest note (the leftmost key) of the upper range (right side range) to be.
- No sound is produced when the keys are pressed.

## Using Layer and Split Together

You can use layer and split together to create a layered split keyboard. When you use layer and split in combination, the high range of the keyboard is assigned two tones (main tone + layered tone), and the low range two tones (split tone + layered split tone).



◄── Split tone + ──►◄── Main tone + Layered tone ──►
Layered split tone          (UPPER1 + UPPER2)
(LOWER1 + LOWER2)
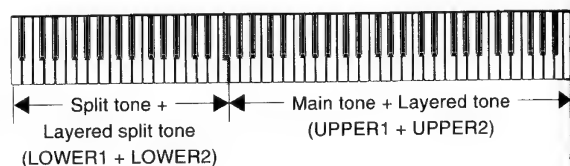
### To layer-split the keyboard

1. Select the main tone, layered tone, split tone, and layered split tone.
   - Use the Mixer to select the tones, following the procedure under "Changing the Parameters of a Channel" on page E-40. The main tone is UPPER1, the layered tone is UPPER2, the split tone is LOWER1, and the layered split tone is LOWER2.

2. Turn on both layer and split to layer split the keyboard.
   - Press the LAYER button once to turn on layer.
   - Press the SPLIT button to turn on split.
   - Both the "LAYER" and "SPLIT" indicators should be on the display.
   - The layered split tone name appears on the display for about seven seconds. During this time you can change the layered split tone if you want. After about seven seconds, the display changes to the main tone name.

3. Now try playing something on the keyboard.

4. Press the **LAYER button** and the **SPLIT button** again to unlayer split the keyboard and return it to normal.

## Using the Pedals

This piano comes equipped with the three pedals shown in the illustration below.



Soft pedal ⎯⎯ ⎿ ⎯ Damper pedal
Sostenuto pedal
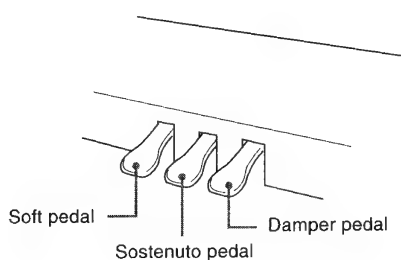
### Pedal functions

- Damper pedal
Pressing this pedal causes notes to reverberate and to sustain longer. In the case of the PIPE ORGAN and STRINGS tones, pressing this pedal while keyboard keys are depressed sustains the notes played until you release the pedal.

- Soft pedal
Pressing this pedal dampens notes and slightly reduces their volume. Only notes played after the pedal is depressed are affected, and any notes played before the pedal is pressed sound at their normal volume.

- Sostenuto pedal
Like the damper pedal, this pedal causes notes to reverberate and to sustain longer. The difference between the two pedals is the timing when they are pressed. With the sostenuto pedal, you press the pedal after depressing the notes you want to sustain. Only the notes whose keyboard keys are depressed when the sostenuto pedal is pressed are affected.
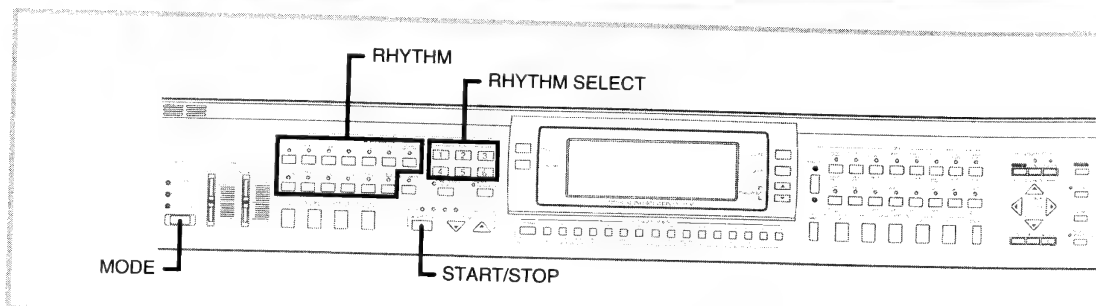
This piano automatically plays bass and chord parts in accordance with the chords you finger. The bass and chord parts are played using sounds and tones that are automatically selected to match the rhythm you are using. All of this means that you get full, realistic accompaniments for the melody notes you play with your right hand, creating the mood of an one-person ensemble.

## About the MODE Button

Use the MODE button to select the accompaniment mode you want to use. Each press of the MODE button cycles through the available accompaniment modes as shown in the illustration below.
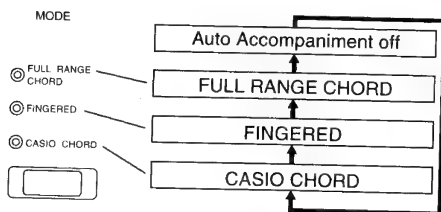


- Only rhythm sounds are produced when all accompaniment mode lamps are off.
- The currently selected accompaniment mode is shown by the mode lamps above the MODE button. Information on using each of these modes starts from page E-25.

## Selecting a Rhythm

The 72 rhythms built into this piano are grouped under 12 RHYTHM buttons. Each RHYTHM button has six rhythms, numbered from 1 to 6.

Example: POPS button rhythms

1. 8 BEAT BALLAD 1
2. 8 BEAT
3. ROCK BALLAD
4. 60'S SOUL
5. 80'S ROCK
6. 80'S POP

- See the Rhythm List at the end of this procedure for a complete list of RHYTHM buttons and their rhythms.

## To select a rhythm

1. Find the rhythm you want in the Rhythm List. Note which **RHYTHM button** you need to press and the rhythm number you need to input.

2. Press the **RHYTHM button** for the rhythm you want to use.

   - This causes the lamp above the RYHTHM button you pressed to light, indicating that you can select one of the rhythms assigned to it. The name and number of the currently selected rhythm also appear on the display at this time.

3. Press the **RHYTHM SELECT button** that corresponds to the number of the rhythm you want to select.

   Example: To select the "16 BEAT SHUFFLE" rhythm, press the RHYTHM button marked 16 BEAT, and then press the RHYTHM SELECT button 6.

## Rhythm List

| NO. | Rhythm | NO. | Rhythm |
|-----|--------|-----|--------|
| POPS | | LATIN | |
| 1 | 8 BEAT BALLAD 1 | 1 | BOSSA NOVA 1 |
| 2 | 8 BEAT | 2 | SAMBA |
| 3 | ROCK BALLAD | 3 | RHUMBA |
| 4 | 60'S SOUL | 4 | MERENGUE |
| 5 | 80'S ROCK | 5 | BEGUINE |
| 6 | 80'S POP | 6 | REGGAE |
| 16 BEAT | | VARIOUS | |
| 1 | 16 BEAT 1 | 1 | SLOW GOSPEL |
| 2 | 16 BEAT 2 | 2 | SKA |
| 3 | 16 BEAT BALLAD | 3 | BLUEGRASS |
| 4 | 16 BEAT SOUL | 4 | COUNTRY |
| 5 | 80'S DISCO | 5 | HAWAIIAN |
| 6 | 16 BEAT SHUFFLE | 6 | BROADWAY |
| ROCK | | BALLAD | |
| 1 | 8 BEAT ROCK | 1 | 8 BEAT BALLAD 2 |
| 2 | 70'S ROCK 1 | 2 | ELEC PIANO BALLAD |
| 3 | SHUFFLE ROCK | 3 | POP BALLAD |
| 4 | R & B | 4 | SOUL BALLAD |
| 5 | SLOW ROCK | 5 | BLUES BALLAD |
| 6 | ROCK WALTZ | 6 | CONCERTO |
| JAZZ | | POPS / OLDIES | |
| 1 | SWING | 1 | POP SHUFFLE |
| 2 | BIG BAND | 2 | 70'S ROCK 2 |
| 3 | SLOW SWING | 3 | OLDIES SHUFFLE |
| 4 | ORCH SWING | 4 | 50'S R&R |
| 5 | HARD BOP | 5 | 50'S BALLAD |
| 6 | JAZZ WALTZ 1 | 6 | NEW ORLNS R&R |
| EUROPEAN | | JAZZ / RAGTIME | |
| 1 | POLKA | 1 | MELLOW JAZZ |
| 2 | MARCH 1 | 2 | JAZZ COMBO 1 |
| 3 | MARCH 2 | 3 | JAZZ COMBO 2 |
| 4 | EURO FOX | 4 | RAGTIME |
| 5 | WALTZ 1 | 5 | BOOGIE-WOOGIE |
| 6 | VIENNESE WALTZ | 6 | JAZZ WALTZ 2 |
| BALLROOM | | LATIN / CLASSIC | |
| 1 | BALLROOM FOX | 1 | SALSA |
| 2 | QUICKSTEP | 2 | BOSSA NOVA 2 |
| 3 | TANGO 1 | 3 | TANGO 2 |
| 4 | MAMBO | 4 | ARPEGGIO |
| 5 | CHA-CHA-CHA | 5 | 6/8 MARCH |
| 6 | BALLROOM WALTZ | 6 | WALTZ 2 |

**▮ NOTE ▮**

Rhythms 4 through 6 (LATIN/CLASSIC) are made up of chord accompaniments only, without drum or other rhythm sounds. Because of this, these rhythms do not sound while auto accompaniment is turned off (all the indicator lamps above the MODE button are off). You can specify chords by using these rhythms while auto accompaniment is turned on (indicated when one of the indicator lamps above the MODE button is lit).

## Playing a Rhythm

Press the START/STOP button to start play of the currently selected rhythm. You can then play along with the rhythm on the keyboard.
To stop rhythm play, press the START/STOP button again.

**▮ NOTE ▮**

Chords will sound along with the rhythm if any of the three accompaniment mode lamps above the MODE button is lit. If you want to play the rhythm pattern without chords, press the MODE button until all of the accompaniment mode lamps are off.

## Using Auto Accompaniment

The following procedure describes how to use the piano's Auto Accompaniment feature. Before starting, you should first select the rhythm you want to use and set its tempo to the value you want.

### To use Auto Accompaniment

1. Use the **MODE button** to select FULL RANGE CHORD, FINGERED, or CASIO CHORD as the accompaniment mode.

   • The currently selected accompaniment mode is the one whose lamp is lit. See "About the MODE Button" on page E-24 for details.

2. Press the **START/STOP button** to start play of the currently selected rhythm.

3. Play a chord to start Auto Accompaniment.

   • The actual procedure you should use to play a chord depends on the currently selected accompaniment mode. Refer to the following pages for details on chord play.

   CASIO CHORD .................... Page E-26
   FINGERED ........................... Page E-26
   FULL RANGE CHORD ...... Page E-27

Name of chord being played       Current measure and beat

4. To stop Auto Accompaniment play, press the **START/STOP button** again.

## ■CASIO CHORD

This method of chord play makes it possible for anyone to easily play chords, regardless of previous musical knowledge and experience. The following describes the CASIO CHORD "Accompaniment keyboard" and "Melody keyboard", and tells you how to play CASIO CHORDs.

### CASIO CHORD Accompaniment Keyboard and Melody Keyboard
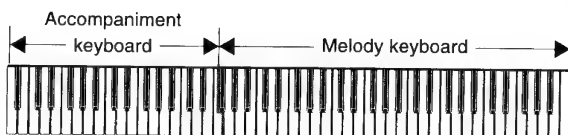


Accompaniment keyboard — Melody keyboard

### IMPORTANT!

The accompaniment keyboard can be used for playing chords only. No sound will be produced if you try playing single melody notes on the accompaniment keyboard.

### Chord Types

CASIO CHORD accompaniment lets you play four types of chords with minimal fingering.

| Chord Types | Example |
|---|---|
| **Major chords**<br>Major chord names are marked above the keys of the accompaniment keyboard. Note that the chord produced when you press an accompaniment keyboard does not change octave, regardless of which key you use to play it. | C Major (C)<br> |
| **Minor chords (m)**<br>To play a minor chord, keep the major chord key depressed and press any other accompaniment keyboard key located to the right of the major chord key. | C minor (Cm)<br> |
| **Seventh chords (7)**<br>To play a seventh chord, keep the major chord key depressed and press any other two accompaniment keyboard keys located to the right of the major chord key. | C seventh (C7)<br> |
| **Minor seventh chords (m7)**<br>To play a minor seventh chord, keep the major chord key depressed and press any other three accompaniment keyboard keys located to the right of the major chord key. | C minor seventh (Cm7)<br> |

### ❚ NOTE ❚

It makes no difference whether you press black or white keys to the right of a major chord key when playing minor and seventh chords.

## ■FINGERED

FINGERED provides you with a total of 15 different chord types. The following describes the FINGERED "Accompaniment keyboard" and "Melody keyboard", and tells you how to play a C-root chord using FINGERED.

### FINGERED Accompaniment Keyboard and Melody Keyboard



Accompaniment keyboard — Melody keyboard

### IMPORTANT!

The accompaniment keyboard can be used for playing chords only. No sound will be produced if you try playing single melody notes on the accompaniment keyboard.



C    Cm    Cdim

Caug *1    Csus4    C7 *2

Cm7 *2    Cmaj7 *2    Cm7-5

C7-5 *1    C7sus4    Cadd9 *2

Cmadd9 *2    CmM7 *2    Cdim7 *1

*1: Inverted fingerings cannot be used. The lowest note is the root.

*2: The same chord can be played without pressing the 5th G.

### ❚ NOTES ❚

- Except for the chords specified in note*1 above, inverted fingerings (i.e. playing E-G-C or G-C-E instead of C-E-G) will produce the same chords as the standard fingering.
- Except for the exception specified in note*2 above, all of the keys that make up a chord must be pressed. Failure to press even a single key will not play the desired FINGERED chord.

## ■ FULL RANGE CHORD

This accompaniment method makes it possible to play a total of 43 chord variations: the 15 available with FINGERED plus 28 additional variations. While an accompaniment pattern is playing, the piano interprets any input of three or more keys that matches a FULL RANGE CHORD pattern to be a chord. Any multi-key input that is not a FULL RANGE CHORD pattern is interpreted as melody play. Because of this, there is no need for a separate accompaniment keyboard, and the entire keyboard from end-to-end can be used for both melody and chords.

### *FULL RANGE CHORD Accompaniment Keyboard and Melody Keyboard*

◀── Accompaniment keyboard/Melody keyboard ──▶

### Chords Recognized by This Piano

The following table identifies patterns that are recognized as chords by FULL RANGE CHORD.

| Pattern Type | Number of Chord Variations |
|---|---|
| FINGERED | The 15 chord patterns shown under "FINGERED" on page E-26. See the "Fingered Chord Chart" on page A-5 for details on playing chords with other roots. |
| Standard Fingerings | 28 standard chord fingerings. The following are examples of the 28 chords available with C as the bass note. $C_6 \bullet Cm_6 \bullet C_{69}$ $\frac{C^\sharp}{C} \bullet \frac{D}{C} \bullet \frac{E}{C} \bullet \frac{F}{C} \bullet \frac{G^\flat}{C} \bullet \frac{G}{C} \bullet \frac{A^\flat}{C} \bullet \frac{A}{C}$ $\frac{B^\flat}{C} \bullet \frac{B}{C} \bullet \frac{C^\sharp m}{C} \bullet \frac{Dm}{C} \bullet \frac{Fm}{C} \bullet \frac{G^\flat m}{C} \bullet \frac{Gm}{C}$ $\frac{A^\flat m}{C} \bullet \frac{Am}{C} \bullet \frac{B^\flat m}{C} \bullet \frac{Bm}{C} \bullet \frac{Dm_7{}^{-5}}{C} \bullet \frac{A^\flat_7}{C}$ $\frac{F_7}{C} \bullet \frac{Fm_7}{C} \bullet \frac{Gm_7}{C} \bullet \frac{A^\flat add9}{C}$ |

Example: To play the chord C major.

Either of the fingerings shown in the illustration below will produce C major.

① ..... Chord C

② ..... Chord $\frac{C}{E}$
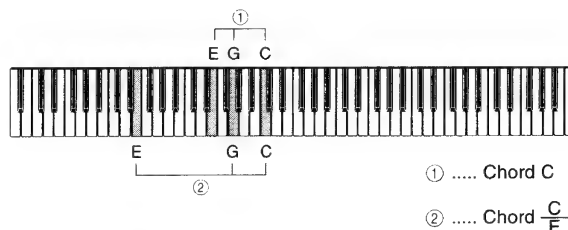
### ❚ NOTES ❚

- As with FINGERED (page E-26), you can play the notes that form a chord in any combination (①).
- When the lowest note of a chord is separated from its neighboring note by six or more semitones, the lowest note becomes the bass note (②).

Diagram labels: SYNCHRO/ENDING, INTRO, TEMPO, ACCOMP VOLUME, MODE, NORMAL/FILL-IN, VARIATION/FILL-IN, START/STOP
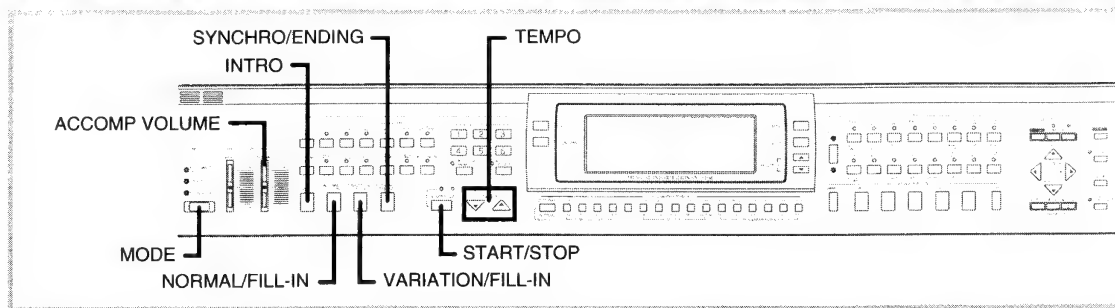
## Adjusting the Tempo

You can adjust the tempo (number of beats per minute) of rhythm play within a range of 30 to 255.

### To adjust the tempo

Press one of the **TEMPO buttons** to increase [▲] or decrease [▼] the tempo setting.
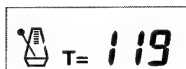


**I NOTES I**
- Pressing both TEMPO buttons (▲ and ▼) at the same time resets the tempo to the default value of the currently selected rhythm.
- The tempo value indicates the number of quarter note beats per minute.

## Adjusting the Accompaniment Volume

You can adjust the volume of the accompaniment part separately from the overall volume.

Use the **ACCOMP VOLUME slider** to adjust the accompaniment volume.

## Using an Intro Pattern

This piano lets you insert a short intro into a rhythm pattern to make startup smoother and more natural.

The following procedure describes how to use the Intro feature. Before starting, you should first select the rhythm you want to use, and set the tempo.

**PREPARATION**
- Select a rhythm and set its tempo.
- Select the accompaniment mode you want to use.

### To insert an intro

Press the **INTRO button** to start the selected rhythm with an intro pattern.

- With the above setup, the intro pattern is played and the auto accompaniment with intro pattern starts as soon as you play chords on the accompaniment keyboard.

**I NOTE I**
The standard rhythm pattern starts to play after the intro pattern is complete.

## Using a Fill-in Pattern

Fill-in patterns let you momentarily change the rhythm pattern to add some interesting variation to your performances.

The following procedure describes how to use the Fill-in feature.

### To insert a fill-in

*1.* Press the **START/STOP button** to start rhythm play.

*2.* Press the **NORMAL/FILL-IN button** to insert a fill-in pattern for the rhythm you are using.

**I NOTE I**
The fill-in pattern does not play if you press the NORMAL/FILL-IN button while an intro pattern is playing.

## Using Variation Rhythm Patterns

In addition to the standard rhythm pattern, you can also switch to a secondary "variation" rhythm pattern for a bit of variety .

### To change to the variation rhythm pattern

*1.* Press the **START/STOP button** to start rhythm play.

*2.* Press the **VARIATION/FILL-IN button** to switch to the variation pattern for the rhythm you are using.

***NOTE***
To switch back to the normal (non-variation) rhythm pattern, press the NORMAL/FILL-IN button.

### To insert a fill in into a variation rhythm

While a variation rhythm pattern is playing, press the **VARIATION/FILL-IN button** to insert a fill in pattern for the variation rhythm you are using.

## Synchro Starting Accompaniment with Rhythm Play

You can set up the piano to start rhythm play at the same time you play the accompaniment on the keyboard.

**PREPARATION**
* Select a rhythm and set its tempo.
* Select the accompaniment mode you want to use.

### To use synchro start

*1.* Press the **SYNCHRO/ENDING button** to put the piano into synchro start standby.

$$\boxed{\text{T= } 120}$$

*2.* Play a chord on the accompaniment keyboard.
* The rhythm pattern starts to play automatically as soon as you play a chord.

***NOTES***
* Only the rhythm plays (without chords) if all the lamps above the MODE button are off.
* If you press the INTRO button before playing anything on the keyboard, the rhythm starts automatically with an intro pattern when you play something on the keyboard.
* To cancel synchro start standby, press the SYNCHRO/ENDING button one more time.

## Finishing with an Ending Pattern

You can end your performances with an ending pattern that brings the rhythm you are using to a natural-sounding conclusion.

### To finish with an ending pattern

While the rhythm is playing, press the **SYNCHRO/ENDING button**.

* This causes the ending pattern to play, which brings rhythm accompaniment to an end.

***NOTE***
The timing when the ending pattern starts depends on when you press the SYNCHRO/ENDING button. If you press the button before the second beat of the current measure, the ending pattern starts playing immediately. Pressing the button at any point in the measure after the second beat results in the ending pattern playing from the beginning of the following measure.

## Using Auto Harmonize

When you are using Auto Accompaniment, Auto Harmonize automatically adds an additional note to your melody in accordance with the chord that is being played. The result is a harmony effect that makes your melody line richer and fuller.

### To use Auto Harmonize

*1.* Use the **MODE button** to select FINGERED or CASIO CHORD as the accompaniment mode.
* The currently selected accompaniment mode is the one whose lamp is lit. See "About the MODE Button" on page E-24 for details.

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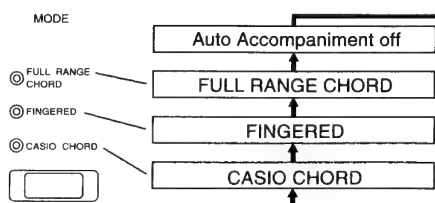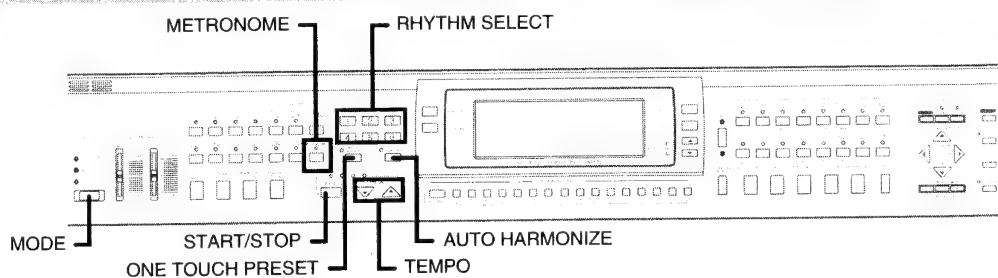
2. Press the **AUTO HARMONIZE button** to turn on Auto Harmonize.

   • This causes the indicator above the AUTO HARMO-NIZE button to light.

3. Start Auto Accompaniment play, and play something on the keyboard.

4. To turn off Auto Harmonize, press the **AUTO HARMONIZE button** again.

   • This causes the indicator above the AUTO HARMO-NIZE button to go out.

**❚ NOTES ❚**

• Auto Harmonize turns off temporarily whenever you start demo tune play or perform a floppy disk operation. It turns back on as soon as the operation or function that caused it to turn off is finished.
• Note that you cannot use Auto Harmonize and layer at the same time.
• Auto Harmonize is enabled only when the Auto Accompaniment mode is FINGERED or CASIO CHORD.

## About Auto Harmonize notes and tones

The notes you play on the keyboard are called "melody notes," while the notes added to the melody by Auto Harmonize is called the "harmonize notes." Auto Harmonize normally uses the tone you selected for the melody notes as the tone for the harmonize notes, but you can use the Mixer (page E-39) to specify a different tone for the harmonize notes. The harmonize note tone is assigned to Mixer Channel 2, so change Channel 2 to the tone you want to use for the harmonize notes.

In addition to the tone, you can also use the Mixer to change a number of other parameters, such as volume balance. See "Changing the Parameters of a Channel" on page E-40 for details on these procedures.

**❚ NOTES ❚**

• The default harmonize note tone when you first turn on Auto Harmonize is the same tone as the melody note tone.
• Changing the melody tone setting automatically changes the harmonize note tone to the same setting.

## Using One-touch Preset

One-touch preset automatically makes the settings listed below in accordance with the rhythm pattern you are using.

• Keyboard tone and volume
• Layer or Auto Harmonize on/off
• Layered tone and volume (when layer is turned on) or har-monize tone and volume (when harmonize is turned on).
• Tempo

### To use one-touch preset

1. Select the rhythm you want to use.

2. Use the **MODE button** to select the accompani-ment mode you want to use.

3. Press the **ONE TOUCH PRESET button**.

   • This automatically makes the one-touch preset set-tings in accordance with the rhythm you selected.

4. Start rhythm and Auto Accompaniment, and play something on the keyboard.

   • Accompaniment is played using the one touch preset settings.
   • Changing the rhythm pattern selection while play-ing with one-touch preset causes the one-touch pre-set settings to change in accordance with the new rhythm.

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## Turning Auto Accompaniment Parts On and Off

Auto Accompaniment patterns are made up of five parts, named: Chord 1, Chord 2, Chord 3, Bass, and Rhythm. You can turn these parts on and off to create exactly the type of accompaniment pattern you want. Parts are turned on and off using channel buttons 6 through 10. The table below shows the relationship between accompaniment parts and channel buttons.

| Auto Accompaniment Part | Channel Button |
|---|---|
| Chord 1 | CH6 |
| Chord 2 | CH7 |
| Chord 3 | CH8 |
| Bass | CH9 |
| Chord Rhythm | CH10 |

See "Turning Channels On and Off" on page E-40 for full details on how to turn Auto Accompaniment parts on and off.

**∎ NOTE ∎**
With some rhythm patterns, some parts are assigned all rests (which mean they normally do not play even when turned on).

## Using the Metronome

The metronome feature of this piano produces a bell sound for the first beat of each measure, followed by click sounds for each successive beat of the measure. It is the perfect tool for practicing tunes without accompaniment (rhythm).

### To start the metronome

1. Press the **METRONOME button** and then use the **RHYTHM SELECT buttons** to specify the number of beats per measure.

> RHYTHM  ь  6  BEAT

**∎ NOTE ∎**
Pressing the RHYTHM SELECT button 1 in step 1 of the above procedure causes all beats to sound as a click, without the bell sound. This setting lets you practice with a steady beat, without worrying about how many beats there are in each measure.

2. Press the **START/STOP button** to start sounding the metronome.
   - The lamp above the START/STOP button flashes in time with the metronome beat.

3. Use the **TEMPO buttons** to set the tempo.
   - Press ▲ to increase the tempo (make it faster) or ▼ to decrease it (make it slower).

> ┌ Tempo value
>
> 🎼 T= 110  MEASURE BEAT  003 : 1
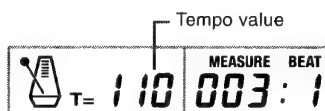
4. To turn off the metronome, press the **START/STOP button**.

## Using Digital Effects

Digital effects make it possible for you to add a variety nuances to your music quickly and easily. The following is a list of 10 digital effects that are available. Try using each one to find out how it changes the sound produced by the keyboard. Note that only one effect can be applied at a time.

| No. | Effect Name | Display Indicator | Description |
|---|---|---|---|
| 0 | Reverb 1 | Reverb1 | Deep reverb |
| 1 | Reverb 2 | Reverb2 | Medium reverb |
| 2 | Reverb 3 | Reverb3 | Shallow reverb |
| 3 | Chorus | Chorus | More depth and breadth |
| 4 | Tremolo | Tremolo | Slight modulation of volume |
| 5 | Phase Shifter | Phaser | Rotary speaker effect |
| 6 | Organ Speaker | Organ Sp | Electronic organ rotary speaker effect |
| 7 | Enhancer | Enhancer | Attack effect by enhancing high harmonics |
| 8 | Flanger | Flanger | Jet plane effect that causes the sound to build and then decay |
| 9 | EQ Loudness | Loudness | Enhanced lower tones |

EFFECT — TRANSPOSE — TUNE/MIDI —

[+]/[–]
TOUCH RESPONSE —
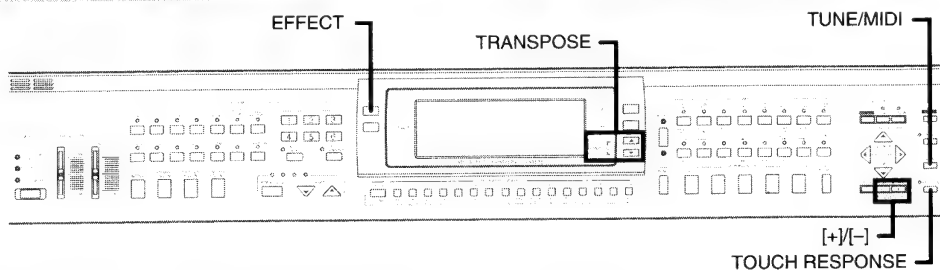
## Turning Digital Effects On and Off

You can turn the currently selected digital effect on and off by pressing the EFFECT button.

- The current digital effect's on/off status is indicated on the display by the "EFFECT" indicator. The digital effect is on while this indicator is displayed, and off when it is not displayed.
- Press the EFFECT button to toggle the currently selected digital effect on and off.

### To turn a digital effect on and off

*1.* Press the **EFFECT button**.

- This causes one of the two digital effect screens shown below to appear.

**When the current digital effect is turned on**

```
EFFECT  0 Reverb1
```

Indicates effect is turned on

Effect number and name (see table of effects on page E-31)

**When the current digital effect is turned off**

```
    Off
```

- The above screens clear if you do not perform any operation within about seven seconds.

*2.* While a digital effect screen is on the display, use the [+] and [–] **buttons** to scroll through the digital effects, until the one you want is displayed.

### ▌NOTES ▌

- Playing a demo tune (page E-13) automatically changes the effect to the one that is assigned to the tune. You cannot change or cancel a demo tune effect.
- Changing the effect setting while sound is being output by the piano causes a slight break in the sound when the effect changes.
- The digital effect is applied not only to the notes you play on the keyboard, but also to rhythms and Auto Accompaniment patterns. Note that effects 3 through 6, and effect 8 can produce a mood that is not suitable for certain types of music when they are applied to rhythms and Auto Accompaniment. When this happens, you can turn off application of the effect to the rhythm and Auto Accompaniment by using the Mixer to set the effect send volume of the accompaniment channel to zero. For details on the actual procedure for doing this, see "Changing the Parameters of a Channel" on page E-40.
- Setting the piano's MAIN VOLUME slider to high volume when Effect 9 (EQ Loudness) is being applied can cause distortion for certain tones and rhythm patterns. When this happens, lower the MAIN VOLUME setting.

## Using Touch Response

Turning on touch response causes the volume and sound quality of keyboard output to change in accordance with the amount of pressure applied to the keyboard.

### To turn touch response on and off

Press the **TOUCH RESPONSE button** to toggle touch response on and off.

- Turning on touch response causes the indicator lamp above the TOUCH RESPONSE button to light.

TOUCH
● RESPONSE

## To set the touch response sensitivity

1. Press the **TOUCH RESPONSE button** to turn on touch response.
   - Indicator above the TOUCH RESPONSE button lights.

2. Within seven seconds after pressing the **TOUCH RESPONSE button**, use the [+] and [–] **buttons** to scroll through the sensitivity settings in the following sequence.

↔ **0 ExLight** ↔ **1 Light** ↔ **2 Normal** ↔ **3 Heavy** ↔ **Off** ↔

- "ExLight" outputs powerful sound even with light key pressure, while "Heavy" requires very heavy key pressure to output powerful sound.
- Pressing the [+] and [–] buttons at the same time returns sensitivity to the "Normal" setting.
- Touch response is turned off when the indicator above the TOUCH RESPONSE button is unlit. At this time, the sound output by the piano does not change with keyboard pressure.

### ∎ NOTES ∎
- Touch response operations affect the piano's internal sound source as well as MIDI OUT data.
- Touch response settings do not affect Song Sequencer playback, accompaniment, or MIDI note data received from an external source.
- Touch response affects different tones in different ways.

## Transposing the Piano

Transpose lets you raise and lower the overall key of the piano in semitone units. If you want to play accompaniment for a vocalist whose sings in a specific key, for example, you can use transpose to change the key of the piano without having to learn to play the song in another key.

## To transpose the piano

Use the **TRANSPOSE buttons** (▲ and ▼) to change the transpose setting of the piano.

Example: To transpose the piano five semitones upwards.

$$\boxed{\text{05 Trans.}}$$

### ∎ NOTES ∎
- The piano can be transposed within a range of –12 (one octave downwards) to +12 (one octave upwards).
- The default transpose setting is 00 when piano power is turned on and while a demo tune is playing.
- The display changes from the transpose screen back to its normal screen if you do not perform any key operation for about seven seconds.
- To return the transpose setting its initial default of 00, display the transpose screen and press the TRANSPOSE buttons (▲ and ▼) at the same time.
- You cannot change the transpose setting while a demo tune is playing.

## Tuning the Piano

The tuning feature lets you fine tune the piano to match the tuning of another musical instrument.

## To tune the piano

1. Press the **TUNE/MIDI button** to display the tuning screen.

$$\boxed{\text{00 Tune}}$$

2. Use the [+] and [–] **buttons** to change the tuning setting of the piano.

Example: To lower the tuning by 20.

$$\boxed{\text{-20 Tune}}$$

### ∎ NOTES ∎
- The piano can be tuned within a range of –50 cents to 50 cents (±50 cents*).
  * 100 cents is equivalent to one semitone.
- The default tuning setting is 00 when piano power is turned on and after a demo tune is played.
- The display changes from the tuning screen back to its normal screen if you do not perform any key operation for about seven seconds.
- To return the tuning setting to its initial default of 00, display the tuning screen and press the [+] and [–] buttons at the same time.
- The tuning setting also affects the sequencer and Auto Accompaniment. It does not, however, affect Auto Accompaniment drum parts.

# Advanced
# Operations

CURSOR

MIXER SELECT

ENTER

[+]/[−]
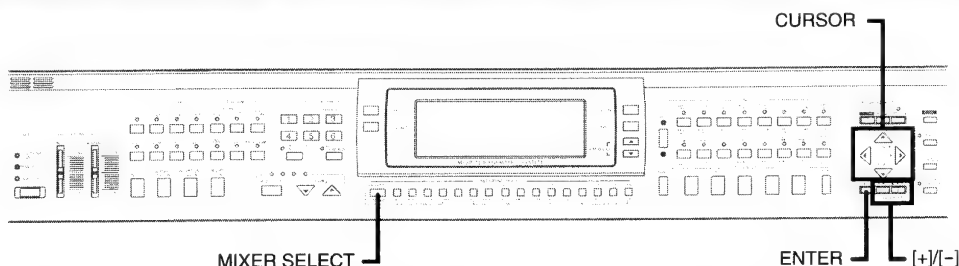
## Selecting a Mixer Tone

In addition to the 32 tones you can select using the TONE buttons (page E-20), you can also use the procedure below to select tones 000 through 199 with the Mixer. After you select a tone you can use it in combination with other Mixer settings.

**I NOTES I**
- See the Tone List on page A-1 for details about tones.
- See "Mixer Function" on page E-39 for information about other Mixer settings and operations.

### To select a tone using the Mixer

*1.* Press the **ENTER button**.

*2.* Check the display to make sure that INTERNAL is the current Mixer sub-mode. If it isn't, use the **MIXER SE-LECT button** to select the INTERNAL sub-mode.

```
INTERNAL
```

*3.* Make sure that Channel 1 is selected. If it isn't, use the [ ◀ ] and [ ▶ ] **CURSOR keys** to select Channel 1.

```
TONE
EFFECT  200GrandPno
```
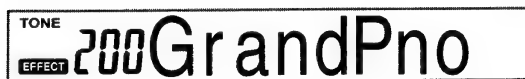
*4.* Use the [+] and [−] **buttons** to select the tone you want.

**I NOTE I**
When one of the drum sets is selected (tone numbers 192 through 199), each keyboard key is assigned a different percussion sound. See page A-3 for details.

## Polyphony

The term polyphony refers to the maximum number of notes you can play at the same time. This piano has 32-note polyphony, which includes the notes you play as well as the rhythms and auto-accompaniment patterns that are played by the keyboard. This means that when a rhythm or auto-accompaniment pattern is being played by the keyboard, the number of notes (polyphony) available for keyboard play is reduced. Also note that some of the tones provide only 16-note polyphony.

## Digital Sampling

A number of the tones that are available with this piano have been recorded and processed using a technique called digital sampling. To ensure a high level of tonal quality, samples are taken in the low, mid, and high ranges and then combined to provide you with sound that are amazingly close to the originals. You may notice very slight differences in volume or sound quality for some tones when you play them at different positions on the keyboard. This is an unavoidable result of multiple sampling, and it is not a sign of malfunction.

## Registration Memory Features

Registration memory lets you store up to 20 piano setups (5 sets x 4 banks) for instant recall whenever you need them. The following is a list of settings that are saved in registration memory.

### Registration Memory Settings

- Tone
- Rhythm
- Tempo
- Split on/off
- Split point
- Layer on/off
- Auto Harmonize on/off
- Mixer settings
- Digital effect on/off
- Digital effect settings
- Accompaniment mode
- Touoch Response on/off
- Touch Response settings
- Transpose
- Tuning

**▮ NOTE ▮**

Registration memory functions are disabled while you are using the Song Sequencer, Pattern Sequencer, demo tune function, or floppy disk operations.

## Setup Names

Set ups are stored into registration memory by assigning them names. Each setup name consists of a bank number from 0 to 3, followed by a letter from A to E. The 20 setup names range from 0-A through 3-E as shown below.



|  | A | B | C | D | E |
|---|---|---|---|---|---|
| BANK 0 | 0-A | 0-B | 0-C | 0-D | 0-E |
| BANK 1 | 1-A | 1-B | 1-C | 1-D | 1-E |
| BANK 2 | 2-A | 2-B | 2-C | 2-D | 2-E |
| BANK 3 | 3-A | 3-B | 3-C | 3-D | 3-E |
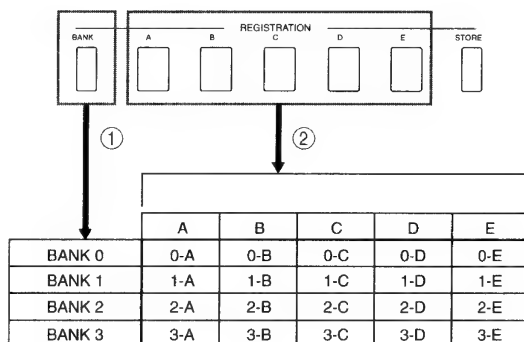
① Use the BANK button to select the bank. Each press of BANK cycle through the bank numbers from 0 to 3.
② Use the REGISTRATION buttons to specify the letter part of the setup name.

**▮ NOTES ▮**

- Whenever you save a setup and assign it a setup name, any setup data previously assigned to that name is replaced with the new data.
- The piano comes with a built-in lithium battery that supplies power to the memory to retain memory contents while piano power is turned off. See "Lithium Battery" on page E-6 for important information about the lithium battery.
- You can use this piano's MIDI capabilities to save your setup data to a computer or other external storage device. See "Bulk Sending Piano Data" on page E-76 for details.
- With this piano, you can use the built-in disk drive to save setup data to diskette. See "Using the Floppy Disk Drive" on page E-63 for details.

BANK — — STORE
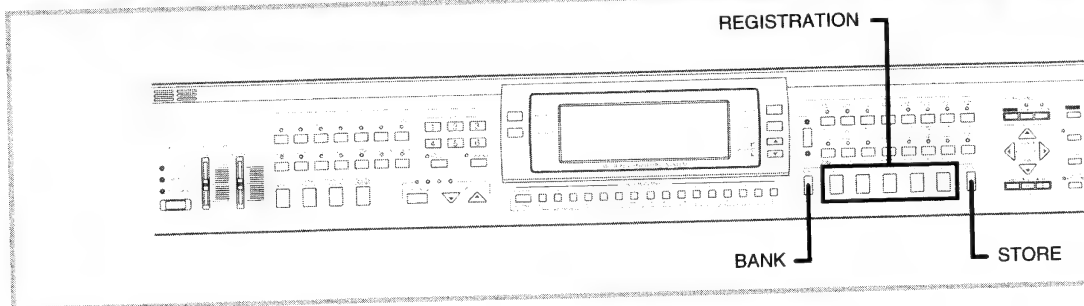
## Saving a Setup in Registration Memory

### To save a setup in registration memory

1. Select a tone and rhythm, and otherwise set up the piano the way you want it.
   - See "Registration Memory Settings" on page E-37 for details on what data is stored in the registration memory.

2. Use the **BANK button** to select the bank you want.
   - If you do not perform any operation for about seven seconds after pressing the BANK button, the display returns to the contents in step 1, above.

   - Bank 0 selected.

   > **0 - Bank**

   - Bank 1 selected.

   > **1 - Bank**

3. While holding down the **STORE button**, press a **REGISTRATION button**.

   - The following display appears when you press the **B** button.

   > **1b Store**

4. Release the **STORE** and **REGISTRATION button**.

**❚ NOTES ❚**
- The setup is saved as soon as you press a REGISTRATION button in step 3, above.
- With the piano, you can batch save all setups to diskette. See "Using the Floppy Disk Drive" on page E-63 for details.

## Recalling a Setup from Registration Memory

### To recall a setup from registration memory

1. Use the **BANK button** to select the bank.
   - If you do not perform any operation for about seven seconds after pressing the BANK button, the piano automatically clears the registration memory recall screen.

   > **1 - Bank**

2. Press the **REGISTRATION button** to input the letter part of the setup name.

   > **1b Recall**

   - The setup name along with the message "Recall" appears on the display for about seven seconds.

**❚ NOTE ❚**
If you press a REGISTRATION button without using the BANK button to select a bank first, the last bank number selected is used.

# Mixer Function

## Mixer Features

The Auto Accompaniment feature and sequencers of this piano can play up to 16 different musical instrument parts at the same time. You can also play along on the keyboard, and even use layer and split to add even more instrument parts.

For example, the following table shows the seven parts that would play if you use layer to play two tones on the keyboard while Auto Accompaniment play is in progress.

| (1) | Keyboard | Main tone |
|-----|----------|-----------|
| (2) | | Layered tone |
| (3) | Auto Accompaniment | Chord 1 |
| (4) | | Chord 2 |
| (5) | | Chord 3 |
| (6) | | Bass |
| (7) | | Rhythm |

The Mixer makes it possible for you to turn each of the above parts on and off, and also specify the tone, volume, stereo (pan) point, and digital effect for each.

**❚ NOTE ❚**
The above explanation applies to the Mixer's Internal Mode.

## Parts and Channels

Each part for Keyboard play, Auto Accompaniment patterns and Song Sequencer tunes is assigned to one of 16 channels. You can use the Mixer to select a channel and adjust various parameters of the assigned part. The following table shows the parts assigned to each channel.

| Channel Number | Part | Channel Button Name |
|----------------|------|---------------------|
| CH1 | Main tone | UPPER1 |
| CH2 | Layered tone<br>Auto Harmonize harmony tone | UPPER2 |
| CH3 | Split tone | LOWER1 |
| CH4 | Layered/split tone | LOWER2 |
| CH5 | — | — |
| CH6 | Auto Accompaniment chord 1 | CHORD1 |
| CH7 | Auto Accompaniment chord 2 | CHORD2 |
| CH8 | Auto Accompaniment chord 3 | CHORD3 |
| CH9 | Auto Accompaniment bass | BASS |
| CH10 | Auto Accompaniment rhythm | RHYTHM |
| CH11 | Song Sequencer track 1 | TR1 |
| CH12 | Song Sequencer track 2 | TR2 |
| CH13 | Song Sequencer track 3 | TR3 |
| CH14 | Song Sequencer track 4 | TR4 |
| CH15 | Song Sequencer track 5 | TR5 |
| CH16 | Song Sequencer track 6 | TR6 |

**❚ NOTES ❚**
- In this manual, "channel" is abbreviated as "CH," which matches the channel numbers marked on the piano above the CHANNEL buttons.
- The CHANNEL button name in the above table corresponds to the text marked on the piano below the CHANNEL buttons.
- The part names shown in the "Part" column of the above table correspond to the parts that can be selected using the Mixer's internal mode. In the case of the External Mode (see following section), the part assigned to each channel corresponds to each MIDI channel.

## Mixer Modes

The Mixer has two main modes, an Internal mode and an External Mode, each of which is described in detail below.

### Internal Mode

This mode lets you control each channel (internal channels) when using the piano internal control (keyboard play, Auto Accompaniment, Song Sequencer playback). This is the default Mixer mode whenever you turn on piano power.

| Keyboard play | Auto Accompaniment play | Song Sequencer play |
|---------------|-------------------------|---------------------|

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |

Internal Channnel

The internal mode allows independent control of these 16 internal channels.
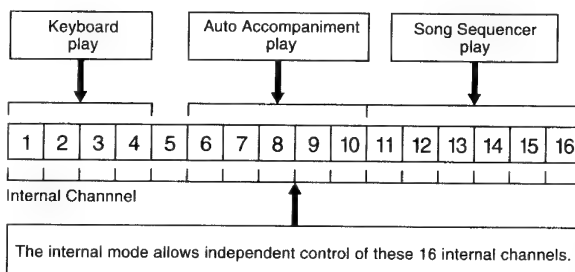
### External Mode

The External Mode provides control of each channel (external channels) when the piano's sound source is under control (MIDI input, SMF playback*) of an external device.

| MIDI input or SMF playback* |
|-----------------------------|

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |

External Channnel

The External Mode allows independent control of these 16 external channels.

CURSOR

TONE

MIXER SELECT

ENTER
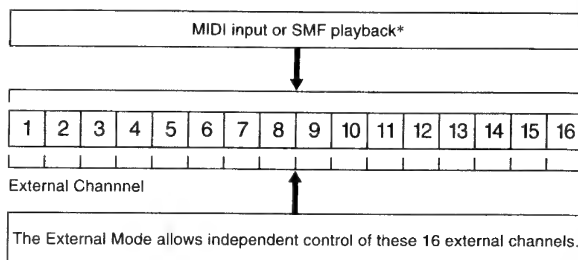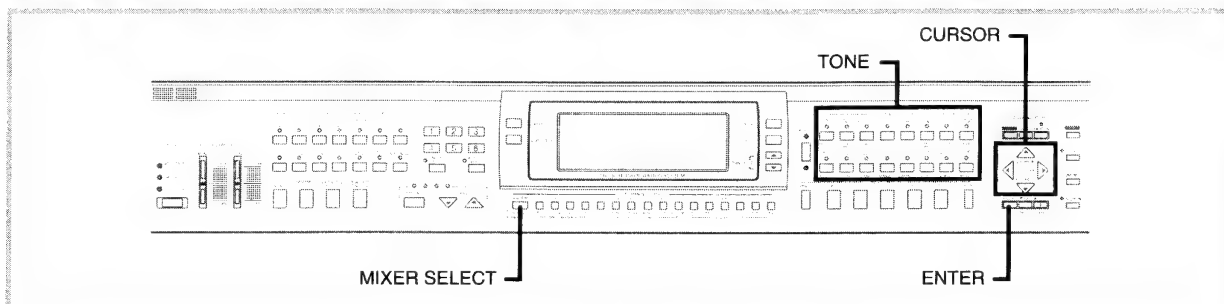
**▮ NOTES ▮**
- The internal channels controlled by the internal mode are completely different from the external channels controlled by the external mode. This means that there are a total of 32 different channels. The Mixer mode saves internal mode and External Mode parameters separately from each other.
- The External Mode is for MIDI (or SMF playback*). See "MIDI" on page E-71 for information about how the Mixer is used during MIDI operations.

* SMF Playback
  The built-in disk drive of the piano allows playback of SMF (standard MIDI files) from diskette. See "Using the Floppy Disk Drive" on page E-63 for details.

## To select the Mixer mode

Press the MIXER SELECT button to toggle between the Mixer mode sub-modes as shown in the illustration below. The currently selected mode is indicated on the display.



INTERNAL Internal

EXTERNAL External
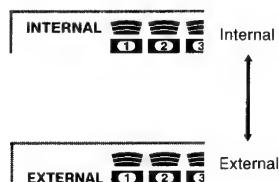
## Turning Channels On and Off

Press the CHANNEL buttons to toggle individual channels on and off. Indicators on the display show the current on/off status of each channel.



Channel on          Channel off

The channel affected and the operation performed when a CHANNEL button is pressed depends on what Mixer mode you are in, as described below.

## Internal Mode

- Each press of a CHANNEL button toggles the applicable channel on and off.
- The on/off status of each channel determines the on/off status of the corresponding part for keyboard play, Auto Accompaniment, and Song Sequencer playback.
- Changing to a different rhythm causes Mixer Settings for CH6 through CH10 to change to the default settings assigned to the new rhythm. These settings also change to the defaults for the currently selected rhythm pattern whenever you switch between the Intro, Normal, Variation, Fill-in, and Ending patterns.

## External Mode

On/off settings in this mode affect MIDI input and SMF playback channels.

- In the External Mode, each press of CHANNEL button CH1 through CH16 toggles the applicable channel on and off.

## Changing the Parameters of a Channel

Use the following procedure to change the parameters of each individual channel.

## To change channel parameters

1. Press the **ENTER button**.

2. Press the **MIXER SELECT button** to select the Mixer mode you want to use.
   - Select the internal mode to make layer, split, Auto Accompaniment, or Song Sequencer settings.
   - Select the External Mode to make MIDI settings.

3. Use the [ ◀ ] and [ ▶ ] **CURSOR keys** to select the channel whose parameters you want to change.
   - See page E-39 for details on layer, split, Auto Accompaniment, and Song Sequencer channel assignments.
   - The frame around the currently selected channel (the current channel) flashes, to indicate that it is selected.

   ——— Channel number frame

   - The on/off status of the current channel is indicated in the measure number area of the display (item 12 on page E-14).

   On ......... **on**          Off ......... **oFF**

4. Change the current channel's tone and volume parameters while a channel number frame is flashing, if you want.
   - Use the [+] and [–] buttons to change the tone.
   - Use [▲] and [▼] to change the volume. The current volume setting is shown as a value in the metronome area of the display (item 6 on page E-14).

   **VOLUME**
   **100**

5. To make additional settings for the current channel, press the **ENTER button** while a channel number frame is flashing.
   - See "To make additional channel parameter settings" for details on making additional channel parameters.

6. After making additional settings in step 5, press the **ENTER button**.
   - If you do not perform any operation for about seven seconds while a channel number frame is flashing, the display returns to that in step 2 of the above procedure automatically.

**❚ NOTES ❚**
- Internal Mode and External Mode settings you make with the above procedure are stored separately.
- You can change the parameters of a channel regardless of whether the channel is on or off.
- Changing a Mixer internal mode channel setting causes the MIDI message that corresponds to the change to be output through the MIDI OUT terminal.

## To make additional channel parameter settings

When making channel parameter settings, press the ENTER button to display the first additional channel parameter screen.
Use the [▲] and [▼] CURSOR keys to scroll through the setting screens shown below.
While any setting screen is on the display, use the [+] and [–] buttons to change the parameter to the value you want.

| Parameter | Screen | Setting Range |
|---|---|---|
| Program Change Number | **000** P r o g . N o . | 000 ~ 231 |
| [▲] ↑         ↓ [▼] | | |
| Volume | **095** V o l u m e | 000 ~ 127 |
| [▲] ↑         ↓ [▼] | | |
| Pan | **064** P a n | 000 ~ 127 |
| [▲] ↑         ↓ [▼] | | |
| Effect Send | **040** E f f e c t | 000 ~ 127 |
| [▲] ↑         ↓ [▼] | | |
| Fine Tune | **00** F i n e T u n e | –50 ~ 00 ~ 50 |
| [▲] ↑         ↓ [▼] | | |
| Coarse Tune | **00** C . T u n e | –12 ~ 00 ~ 12 |
| [▲] ↑         ↓ [▼] | | |
| Expression | **127** E x p r e s s | 000 ~ 127 |

See the following section titled "Additional Channel Mode Parameters" on page E-42 for details on what each of these parameters controls.

**❚ NOTES ❚**
- The first screen is normally the pan screen. If you used the additional channel parameter screens since turning on power, the last setting you used appears first.
- You can use the [◀] and [▶] CURSOR keys to change the current channel while an additional channel parameter screen is on the display.
- Channel 10 is reserved for drum sounds, so only tone number 192 to 199 can be selected.

## Additional Channel Mode Parameters

The following describes each of the additional channel mode parameters.

### Program Change Number

This parameter controls the tone assigned to the channel.

### Volume

This is the parameter that controls the volume of the selected channel.

### Pan

This parameter controls the pan pot, which is the center point of the left and right stereo channels. Setting 064 specifies center, a value less than 064 moves the point left and a value greater than 064 moves it right.

### Effect Send

This parameter controls the depth of the digital effect for each channel. Enhancer and Loudness, however, are not changed.

### Fine Tune

This parameter controls the fine tuning of the selected channel's pitch in cent units.

### Coarse Tune

This parameter controls the coarse tuning of the selected channel's pitch in semitone units.

### Expression

This parameter controls the volume of the selected channel. Though this parameter is identical to the volume parameter, it is used for desktop music applications.

# Using the Song Sequencer

The built-in Song Sequencer lets you record up to two separate songs in memory for later playback.

## Songs and Tracks

The Song Sequencer records and plays back much like a standard tape recorder. You can have up to two separate, independent songs in Song Sequencer memory at the same time.

Each song is make up of a total of six tracks, each of which can be recorded separately. Then when you play back the tracks together, it sounds like an entire group of musicians, each playing a different part.
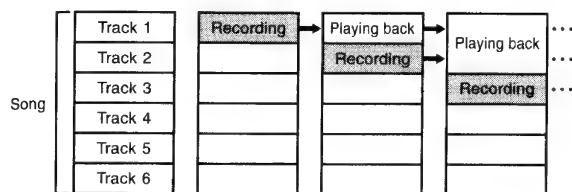


As shown in the illustration above, you add tracks one-by-one while listening to the tracks you recorded previously.

**⏸ NOTES ⏸**
- With this piano, Track 1 can be used to record keyboard play and Auto Accompaniment. Tracks 2 through 6 can be used for keyboard play only, so they are called melody tracks. As shown in the illustration above, you record Tracks 2 through 6 while listening to what you have already recorded up to that point.
- Note that each track is independent of the others. This means that even if you make a mistake while recording, you only need to re-record the track where the mistake was made.
- Tone settings can be changed during recording, and each tone change is recorded in the applicable track. This means you can have up to six different instrument parts in one song.

## Recording

There are two methods you can use to record with the Song Sequencer: real-time recording and punch-in recording.

### Real-time Recording

With this method, notes are recorded as you play them on the keyboard.

### Punch-in Recording

This method lets you re-record from a specific section of a song that is already in memory. You can use punch-in recording to correct mistakes you made during real-time recording.

## Global Settings and Operations

A global setting or operation is one that affects all the tracks that make up a song. The following is a list of the global settings and operations.

- Metronome setting
- Song delete
- Meter setting
- Initial tempo value
- Quantize setting after recording

See "Global Settings and Operations" on page E-49 for full details on what each setting and operation does, and how to use them.

## Song Sequencer Data

The type of data that is stored by the Song Sequencer during a recording operation depends on whether you are using real-time recording or punch-in recording. The same type of data is recorded regardless of the track, except that only Track 1 records Auto Accompaniment.

### Real-time Recording – Track 1 Only

The following data is recorded by Track 1 in addition to the data listed described under "Real-time Recording – All Tracks" below.
- Rhythm pattern and rhythm pattern changes during recording
- INTRO, SYNCHRO/ENDING, NORMAL/FILL-IN, VARIATION/FILL-IN button operations
- Chords played on the accompaniment keyboard

### Real-time Recording – All Tracks

- Notes played on the keyboard
- Initial tone setting and any changes made during recording
- Pedal operations

### Punch-in Recording – Track 1 Only

The following data is recorded by Track 1 only during punch-in recording.
- Rhythm pattern changes during recording
- Chord specifications
- INTRO, SYNCHRO/ENDING, NORMAL/FILL-IN, VARIATION/FILL-IN button operations

### Punch-in Recording – Tracks 1 through 6

- Notes played on the keyboard
- Initial tone setting and any changes made during recording
- Pedal operations

### Unrecorded Data

The following data is not recorded by the Song Sequencer.
- Touch Response on/off setting
- One-touch preset operations
- Registration memory operations
- Layer, split, Auto Harmonize settings

RECORD
SONG
START/STOP
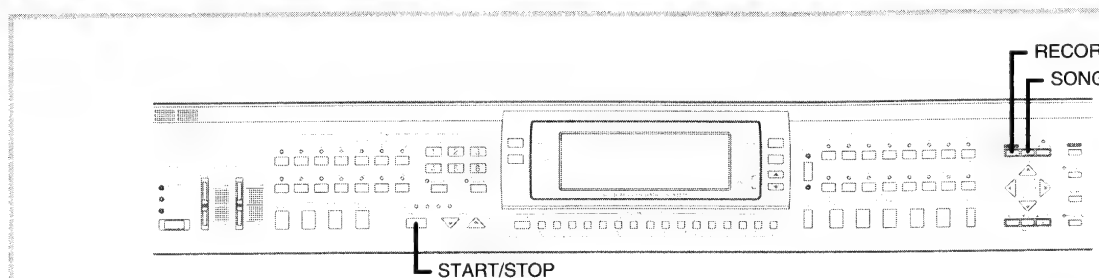
### One-time Only Settings

#### Tempo

Only one tempo setting can be made at the beginning of the recording. Tempo cannot be changed while recording is in progress.

#### Mixer (CH1 to CH16)

Mixer settings can be made at the beginning of the recording only, but they can be changed after the recording is complete. The Mixer settings in effect when you enter record standby are the ones that are recorded.

## Song Sequencer Memory Capacity

Memory Capacity: 4,900 notes
Available notes can all be used for a single song, or divided between two songs.
• The measure number (item 12 on page E-14) and beat number (item 11 on page E-14) flashing on the display during recording indicates that memory is almost full (space for about 100 notes or less remaining).
• Recording stops automatically as soon as memory becomes full. Auto Accompaniment and rhythm pattern play also stops at this time if you are using them.

## Song Sequencer Memory Precautions

Note the following important points about data stored in Song Sequencer Memory.
• Recording to a track that already contains data replaces the previous recording with the new one.
• The piano comes with a built-in lithium battery that supplies power to the memory to retain Song Sequencer memory data. If this lithium battery goes dead, memory contents are deleted any time piano power is turned off. The normal life of the original battery is five years from the time it is loaded at the factory. It is up to you to contact your nearest CASIO service provider about having the lithium battery replaced periodically. Note that the cost for battery replacement will be charged to you.
• Turning off the piano while a record operation is in progress causes any data partially recorded to a track to be deleted.
• Song Sequencer memory contents can be sent to a computer or other external device as MIDI data for storage. See "Bulk Sending Piano Data" on page E-76 for details.
• With the piano, you can also store Song Sequencer memory data on a floppy diskette. See "Using the Floppy Disk Drive" on page E-63 for details.

## Song Sequencer Modes

The song sequencer has two modes: a Record/Playback Mode f real-time recording, punch-in recording, and song playback, and Global Mode. The following illustration shows how each of the modes is indicated.



Song Sequencer Off    U

— SEQUENCER —
RECORD  SONG  PATTERN

GrandPno

Record/Playback Mode

— SEQUENCER —
RECORD  SONG  PATTERN

SUO TUNE1

Global Mode    Fla

— SEQUENCER —
RECORD  SONG  PATTERN

Metr=Rec
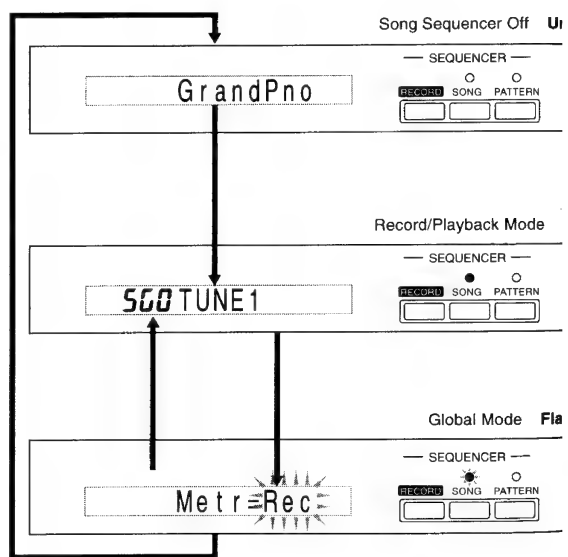
• The indicator lamp above the SONG button is off when the Son Sequencer is turned off.
• Pressing the SONG button once turns on the Song Sequencer an enters the Record/Playback Mode. The indicator lamp above th SONG button turns on at this time.
• Pressing the SONG button again changes to the Global Mode, whi causes the indicator lamp above the SONG button to flash.
• Pressing the SONG button exits the Global Mode.
• Pressing the ENTER button in the Global Mode returns to th Record/Playback Mode.

## Real-time Recording

Note that the procedure you use for Track 1 is different from that for Tracks 2 through 6.

### PREPARATION

- Determine the tones and rhythms (if any) that you want to use.
- Use the MODE button to select the Auto Accompaniment mode you want to start recording with. If you do not want to start with Auto Accompaniment, select OFF.
- Set the tempo that you want to use during recording.

### ▌NOTES ▌

- You can change the tone and rhythm while recording is in progress. Any changes you make become part of the recorded data.
- The tempo you use for recording does not affect the tempo of the playback. This means you can record at a very slow tempo for easy play, and then speed up the tempo for playback.
- If you are using a rhythm pattern, notes are recorded using the meter (time) of the rhythm pattern. If you are not using a rhythm pattern, you must set the meter yourself using the procedure under "Meter (③)" on page E-51.
- The following procedure shows the most basic operations for real-time recording to Track 1. For other variations, see "Track 1 Real-time Recording Variations" on this page.

### To use real-time recording in Track 1

1. Press the **SONG button** once.
   - This causes the indicator lamp above the SONG button to light.

2. Select the user song area to which you want to record.
   - Use the [+] and [−] buttons to select User Song Area 0 (SG0) or User Song Area 1 (SG1).

### *5G0* TUNE 1

- Change Mixer settings (CH1) if you want. The Mixer settings you make for CH1 are copied to Track 1 during recording.
- Use Mixer CH1 to select a tone. See "Selecting a Mixer Tone" on page E-36 for more details.

3. Press the **RECORD button** to enter record standby.
   - The REC indicator and the frame around the CH11 (Track 1) flashes on the display.
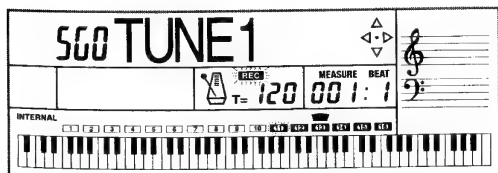


- Track 1 (CH11) is automatically selected as the record track whenever you enter record standby.
- CH 11 through CH 16 of the level meter show which tracks already contain recorded data. See "Level Meter During Record Operations" on page E-48 for details on how to read the level meter.

4. Make any tone, rhythm, or accompaniment mode setting you want.
   - Rhythm
   - Accompaniment mode

5. Press the **START/STOP button** to start recording.
   - At this time the REC indicator and the frame around the channel number that corresponds to the selected track stop flashing.
   - The metronome normally sounds during recording. If you want to turn off the metronome, use the procedure under "Metronome Setting (①)" on page E-50.

6. Play the notes you want to record on the keyboard.
   - Chords played on the accompaniment keyboard in accordance with the accompaniment method selected with the MODE button are also recorded in Track 1.
   - Pedal operations are also recorded. See "Real-time Recording–All Tracks" on page E-43 for details .

7. After you are finished playing, press the **START/STOP button** again to stop recording.
   - The REC indicator clears from the display when recording is stopped.
   - Pressing the START/STOP button again at this point plays back the song that you just finished recording. See "Playing Back from Song Sequencer Memory" on page E-49 for details on song playback.

### ▌NOTES ▌

- Real-time recording to a track that already contains data replaces the previous recording with the new one.
- If you make a mistake while recording, you can either record over again from step 1, or you can use punch-in recording (page E-46) to correct them.
- If you change the rhythm pattern part way through real-time recording, the meter value indicated on the display remains unchanged, even if the new rhythm has a different meter.
- Changing the Mixer settings of a track that is already recorded and then recording to another track causes the changed Mixer settings of the previously recorded track to be replaced with the new settings. You can use this technique to change Mixer settings of tracks that are already recorded.

## Track 1 Real-time Recording Variations

The following describes a number of different variations you can use when recording to Track 1 using real-time recording. All of these variations are based upon the procedure described under "To use real-time recording in Track 1" on this page.

### ● To record without rhythm

Skip step 5. Real-time recording without a rhythm starts when you press a keyboard key.

### ● To start recording with synchro start

In place of step 5, press the SYNCHRO/ENDING button. Auto-accompaniment and recording will both start when you play a chord on the accompaniment keyboard.

### ● To record using an intro, ending, or fill-in

During recording, the INTRO, SYNCHRO/ENDING, NORMAL/FILL-IN, and VARIATION/FILL-IN buttons (page E-28 to 29) can all be used to perform their normal operation.

### ● To synchro start Auto Accompaniment with an intro pattern

In place of step 5, press the SYNCHRO/ENDING button and then the INTRO button. Auto Accompaniment will start with the intro pattern when you play a chord on the accompaniment keyboard.

START/STOP           ENTER
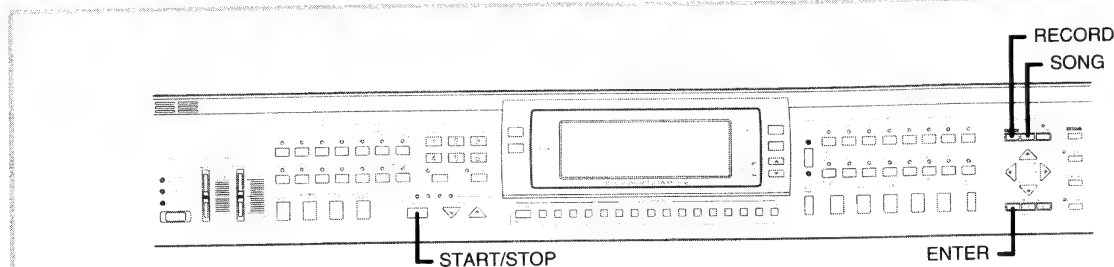
● **To start Auto Accompaniment part way into a recording**

In place of step 5, press the SYNCHRO/ENDING button and then start playing on the melody keyboard to start recording without accompaniment. When you reach the point where you want accompaniment to start, play a chord on the accompaniment keyboard to start Auto Accompaniment.

## To use real-time recording in Tracks 2 through 6

**❚ NOTE ❚**
If you are performing real-time recording in Tracks 2 through 6 immediately after you finished real-time recording in Track 1, skip steps 1 and 2 of the following procedure.

**1.** Press the **SONG button** once.
- This causes the indicator lamp above the SONG button to light.

**2.** Select the user song area to which you want to record.
- Use the [+] and [–] buttons to select User Song Area 0 (SG0) or User Song Area 1 (SG1).
- Change Mixer settings for the channel if you want. The Mixer settings you make for the channel are copied to applicable track during recording.

**3.** Select the tone you want.
- Use Mixer CH1 to select a tone. See "Selecting a Mixer Tone" on page E-36 for more details.

**4.** Press the **RECORD button** to enter record standby.
- The REC indicator appears, and the frame around the currently selected channel (track) flashes on the display.
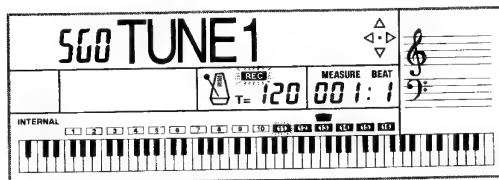


- CH 11 through CH 16 of the level meter show which tracks already contain recorded data. See "Level Meter During Record Operations" on page E-48 for details on how to read the level meter.

**5.** Select the track to which you want to record.
- Use CHANNEL buttons CH12 (Track 2) through CH16 (Track 6) to select the track you want.
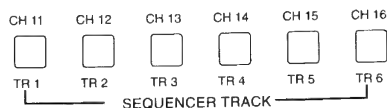


**6.** Press the **START/STOP button** to start recording.
- At this time the REC indicator stops flashing.
- The metronome normally sounds during recording. If want to turn off the metronome, use the procedure un "Metronome Setting (①)" on page E-50.

**7.** Play the notes you want to record on the keyboar

**8.** After you are finished, press the **START/STOP but** to stop recording.
- The REC indicator disappears from the display when rec ing is stopped.

**9.** At this point you can repeat steps 3 through 8 for er tracks, if you want.

## Punch-in Recording

Note that the procedure you use for Track 1 is different from tha Tracks 2 through 6.

**PREPARATION**
- Determine the tones that you want to use.
- Set the tempo that you want to use during recording.

**❚ NOTES ❚**
- You can change rhythm while recording is in progress.
- The previously recorded rhythm pattern is automatically selected at but you can change the rhythm during punch-in recording. Char the rhythm during punch-in recording, however, may cause the m nome display and rhythm beat to be out of synch with the rhythm t playing.
- The tempo you use for recording does not affect the tempo of the back. This means you can record at a very slow tempo for easy and then speed up the tempo for playback.

## To use punch-in recording in Track 1

**1.** Press the **SONG button** once.
- This causes the indicator lamp above the SONG butt light.

**2.** Select the user song area that contains the song w contents you want to change using punch-in rec ing.
- Use the [+] and [–] buttons to select User Song Area 0 or User Song Area 1 (SG1).

3. Select the tone you want.
   • Use Mixer CH1 to select a tone. See "Selecting a Mixer Tone" on page E-36 for more details.

4. Press the **RECORD button** to enter record standby.
   • The REC indicator appears, and the frame around the CH11 (Track 1) flashes on the display.

```
5G0 TUNE 1            △
                     ◁•▷
                      ▽
              REC   MEASURE  BEAT
         T= 120  001:1
INTERNAL
```

   • CH 11 through CH 16 of the level meter show which tracks already contain recorded data. See "Level Meter During Record Operations" on page E-48 for details on how to read the level meter.
   • If there is no accompaniment recorded yet, you can press the SYNCHRO/ENDING button here to start recording along with rhythm and chord accompaniment.

5. Press the **ENTER button** to enter the Punch-in Mode.

```
5G0 Punch  In
```

6. Press the **START/STOP button** to start playback of the song in the user song area you selected in step 2.

7. When playback reaches the part you want to change, play the new part on the keyboard.
   • Playback from memory stops and recording begins as soon as you play something on the keyboard.
   • You can change the rhythm setting while recording is in progress.
   • Continue playing until the end of the song.

```
5G0 Punch  In   △
                ◁•▷
                 ▽
              REC   MEASURE  BEAT
         T= 120  001:1
INTERNAL
```
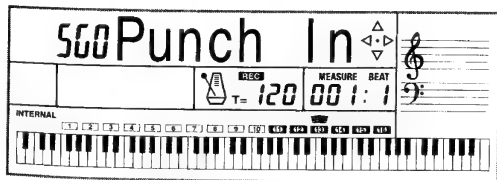
   • You can also change Auto Accompaniment chords during punch-in recording by playing chords on the accompaniment keyboard.
   • If a synchro start operation is already recorded in Track 1, playing something on the accompaniment keyboard starts rhythm play and records it.
     See "Synchro Starting Accompaniment with Rhythm Play" on page E-29 or details on using synchro start.

8. After you are finished, press the **START/STOP button** to stop recording.
   • The REC indicator disappears from the display when recording is stopped.
   • After recording is stopped, you can press the START/STOP button to playback what you have just recorded. See "Playing Back from Song Sequencer Memory" on page E-49 for details on the type of data recorded to Song Sequencer memory.

## To use punch-in recording in Tracks 2 through 6

**▮ NOTE ▮**
If you are performing punch-in recording in Tracks 2 through 6 immediately after you finished punch-in recording in Track 1, skip steps 1 and 2 of the following procedure.

1. Press the **SONG button** once.
   • This causes the indicator lamp above the SONG button to light.

2. Select the user song area that contains the song whose contents you want to change using punch-in recording.
   • Use the [+] and [–] buttons to select User Song Area 0 (SG0) or User Song Area 1 (SG1).
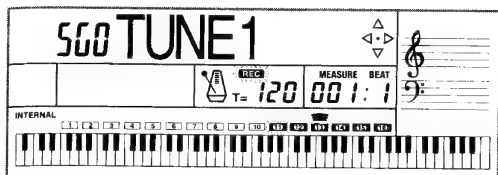
3. Select the tone you want.
   • Use Mixer CH1 to select a tone. See "Selecting a Mixer Tone" on page E-36 for more details.

4. Press the **RECORD button** to enter record standby.
   • The REC indicator appears, and the frame around the CH11 (Track 1) flashes on the display.

```
5G0 TUNE 1            △
                     ◁•▷
                      ▽
              REC   MEASURE  BEAT
         T= 120  001:1
INTERNAL
```
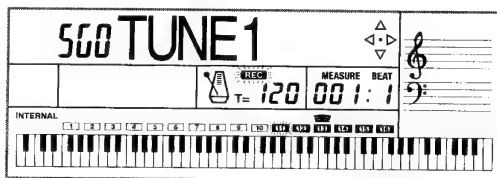
   • CH 11 through CH 16 of the level meter show which tracks already contain recorded data. See "Level Meter During Record Operations" on page E-48 for details on how to read the level meter.

5. Select the track whose contents you want to change.
   • Use CHANNEL buttons CH12 (Track 2) through CH16 (Track 6) to select the track you want.

```
CH 11  CH 12  CH 13  CH 14  CH 15  CH 16
 ☐      ☐      ☐      ☐      ☐      ☐
TR 1   TR 2   TR 3   TR 4   TR 5   TR 6
       └──────── SEQUENCER TRACK ────────┘
```
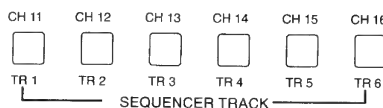
6. Press the **ENTER button** to enter the Punch-in Mode.

```
5G0 Punch  In
```

   • Pressing the ENTER button again exits the Punch-in Mode.

7. Press the **START/STOP button** to start playback of the song in the user song area you selected in step 2.
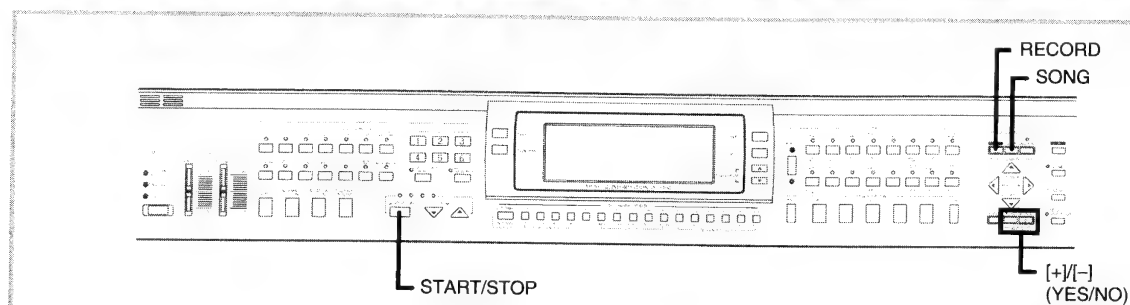
**8.** When playback reaches the part you want to change, play the new part on the keyboard.
- Playback of the current track stops and punch-in recording starts as soon as you play something on the keyboard.
- Pressing the ENTER button instead of playing something on the keyboard starts recording of a blank in the selected track (except for the accompaniment of Track 1) until you play something.
- Continue playing until the end of the song.

**9.** After you are finished, press the **START/STOP button** to stop recording.
- The REC indicator disappears from the display when recording is stopped.

**10.** At this point you can repeat steps 3 through 9 for other tracks, if you want.

### Playback Tracks

When recording to a track with the Song Sequencer, the contents of any tracks that are already recorded normally play back. These are called playback tracks. You can turn playback tracks on (so they play during recording) or off (so they don't play). See "Turning Channels On and Off" on page E-40 for details.

### Level Meter During Record Operations

Channels CH11 through CH16 correspond to Tracks 1 through 6. During record standby, the level meter shows which tracks are already recorded. Three level meter segments indicate a channel is already quoted, while no segment indicates that the channel is empty (unrecorded).



Recorded tracks

Empty (unrecorded) tracks
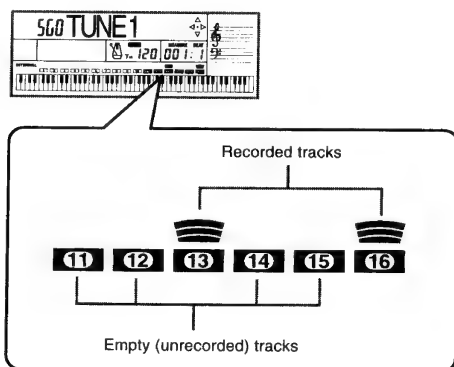
## To Delete the Contents of a Specifi
Track

Note that a track delete operation cannot be undone. Make sure y
no longer need the contents of a track before you delete them.

**1.** Press the **SONG button** once.
- This causes the indicator lamp above the SONG button
light.

**2.** Select the user song area that contains the track who
contents you want to delete.
- Use the [+] and [−] buttons to select User Song Area 0 (SG
or User Song Area 1 (SG1).



**3.** Press the **RECORD button** to enter record standby.
- The REC indicator appears, and the frame around the CH
(Track 1) flashes on the display.
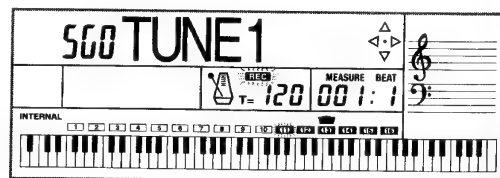


- CH 11 through CH 16 of the level meter show which tra
already contain recorded data. See "Level Meter Duri
Record Operations" on this page for details on how to r
the level meter.

**4.** Select the track whose contents you want to delete
- Use CHANNEL buttons CH11 (Track 1) through CH16 (T
6) to select the track you want.

**5.** Press the [+] and [−] **buttons** at the same time.
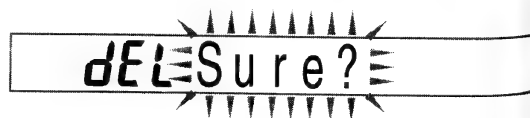
6. Press the **YES button** to delete the selected track or the **NO button** to abort the delete operation.

```
dEL Complete
```

- After a few moments, the piano exits the record operation.
- The message "dEL No Data" appears on the display for about one second if the track you selected in step 4 does not contain any data.

## Playing Back from Song Sequencer Memory

Use the following procedure when you want to play back the contents of Song Sequencer memory.

- Skip steps 1 and 2 of the following procedure if you have just finished a real-time recording operation.

### To play back from Song Sequencer memory

1. Press the **SONG button** once.
   - This causes the indicator lamp above the SONG button to light.

2. Select the user song area that contains the song you want to play back.
   - Use the [+] and [–] buttons to select User Song Area 0 (SG0) or User Song Area 1 (SG1).

3. Press the **START/STOP button** to start playback.
   - Use the TEMPO buttons to adjust the playback tempo.
   - See the notes below for other operations you can perform during playback.

4. Press the **START/STOP button** again to stop playback.

### ❚ NOTES ❚

- Pressing the START/STOP button starts playback from the beginning of the selected song.
- You can play along on the keyboard during Song Sequencer playback. You can use layer and split for keyboard play.
- You can use the Mixer to adjust the volume level and stereo points of the playback track. Such settings are output from MIDI OUT when they are made.
- You cannot change the MODE button setting during Song Sequencer playback.

## Song Sequencer and Mixer Operations

During Song Sequencer playback standby and playback, all four CURSOR keys and the ENTER button function as Mixer operation buttons. This means you can change Mixer settings for each track for both recording and playback.

### Mixer Settings Recorded by Each Track

Mixer settings are recorded independently for each track. Mixer settings are recorded as track data under either of the following two conditions.

- Mixer settings made for CH1 during Song Sequencer playback standby are recorded to the track selected for recording.
- Mixer settings are saved for the applicable channels regardless of whether they are made during recording or playback.

### Mixer Settings During Playback

Selecting a song area causes the Mixer settings recorded for each track to be recalled and assigned to their corresponding channels.

### Turning Tracks On and Off

- During playback standby or actual playback, you can turn Tracks 1 through 6 on and off using CHANNEL buttons CH11 through CH16. This means you can select which channels (parts) you want to play or even play back a single channel.
- You can also turn the playback of previously recorded channels on and off during real-time recording.

### ❚ NOTE ❚

During real-time recording standby, CHANNEL buttons CH11 through CH16 are used to select the record track. This means you cannot use the CHANNEL buttons to turn playback channels on and off during record standby.

## Global Settings and Operations

A global setting or operation is one that affects all the tracks that make up a song. The following is a list of the global settings and operations.

① Metronome setting
② Song delete
③ Meter setting
④ Initial tempo value
⑤ Quantize setting after recording
⑥ Quantize execution

### To make global settings

1. Press the **SONG button** once.
   - This causes the indicator lamp above the button to light.

2. Select the user song area that contains the song whose global settings you want to change.
   - Use the [+] and [–] buttons to select User Song Area 0 (SG0) or User Song Area 1 (SG1).

3. Press the **SONG button** again.
   - This causes the indicator lamp above the button to flash, and the first global setting screen to appear on the display.

**CURSOR**

**CHANNEL** **ENTER** **[+]/[−]**
**(YES/NO)**
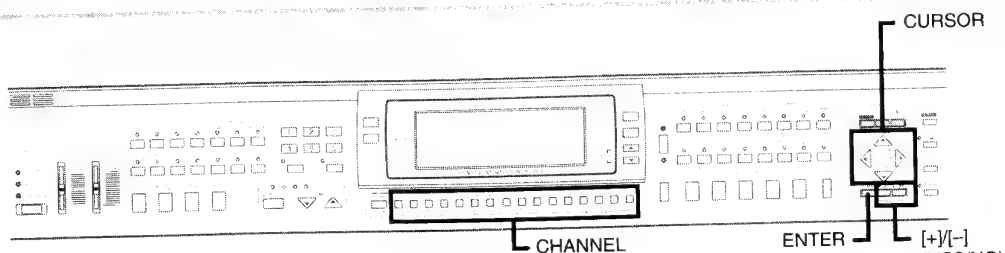
4. Use the [ ◀ ] and [ ▶ ] **CURSOR keys** to scroll through the global setting and operation screens.
   • The numbers shown to the left of the sample displays below correspond to the following sections that provide details on each setting.

① Metr=Rec ◁⚏▶

[◀] ↕ [▶]

② Song0Del ◀⚏▶

[◀] ↕ [▶]

③ Bt= 4/4 ◀⚏▶

[◀] ↕ [▶]

④ Tmpo=120 ◀⚏▶

[◀] ↕ [▶]

⑤ Qtz= 4 ◀⚏▶

[◀] ↕ [▶]

⑥ Qtz Exe? ◀⚏▷
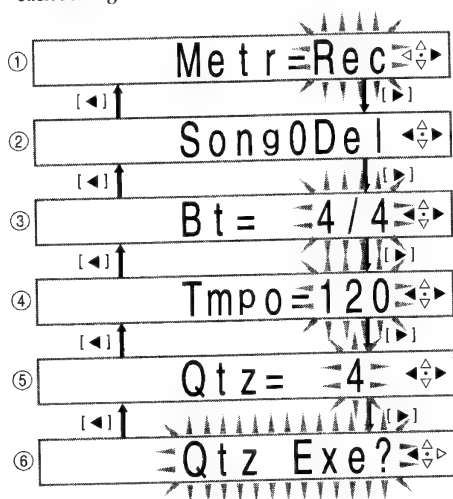
5. When the item you want is on the screen, change it to the setting you want.
   • See the explanations following this procedure for details on making each global setting.

6. After you are finished making a particular setting, press the **ENTER button** to return to the global setting screen.
   • Press [◀] or [▶] in place of the ENTER button if you want to change to another setting screen and make other settings.

## Metronome Setting (①)

This setting controls whether or not the metronome sounds during Song Sequencer real-time recording and playback.

Metr=Rec ◁⚏▶

| Display Indicator | Meaning |
|---|---|
| Off | Metronome off |
| Rec | Metronome sounds during recording only (initial default setting) |
| R & P | Metronome sounds during recording and playback |

Metronome sound: The first beat is a chime, followed by a standard metronome click for the other beats.

• Use the [+] and [−] buttons to change the metronome setting.

## Song Delete (②)

Use this operation to delete a song from a specific user song area.
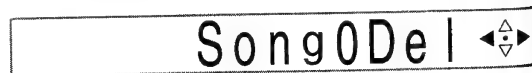
Song0Del ◀⚏▶

1. From the Global menu, use the [ ◀ ] and [ ▶ ] CURSOR keys to display the "Song0Del" screen, and then press the [+] and [−] buttons at the same time.
   • A message appears to confirm whether you want to delete the song.

dEL Sure?

2. Press the **YES button** to delete the song or the NO button to abort the delete operation without deleting anything.
   • Pressing the YES button causes the message shown below to appear for about one second. Next, the display returns to the global setting screen.

dEL Complete

## Meter (③)

This setting specifies the meter of the song.

$$Bt = 4/4$$
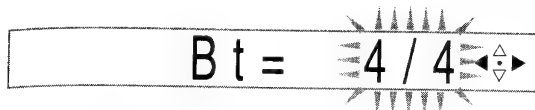
### ▌ NOTE ▌

If a song is already recorded with a rhythm, the meter of the rhythm is set automatically.

| Setting | | Setting |
|---|---|---|
| 2 / 4 | | 3 / 8 |
| 3 / 4 | | 5 / 8 |
| 4 / 4 (initial value) | | 6 / 8 |
| 5 / 4 | | 7 / 8 |
| 6 / 4 | | 9 / 8 |
| 7 / 4 | | |

• Use the [+] and [−] buttons to change the setting.

## Initial Tempo (④)

This setting specifies the initial tempo value for song playback.

$$Tmpo = 120$$
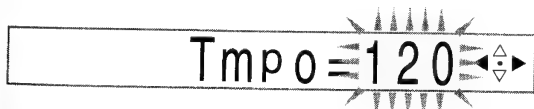
• Use the [+] and [−] buttons to set the initial tempo value within the range of 030 to 255.
• The setting you make here does not affect the tempo during real-time recording.
• You can use the TEMPO buttons to change the tempo of a song while it is playing. Pressing both the TEMPO buttons at the same time during song playback returns the tempo to the initial default value you set here.

## Record Quantize Setting (⑤)

This setting determines the quantize value after recording. After recording, quantize adjusts the timing of notes input to each track on the keyboard to match those selected by the setting you make here.

$$Qtz = 4$$
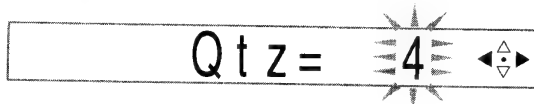
1. Use the **CHANNEL buttons** to select the channel whose quantize setting you want to change.

2. Use the [+] and [−] **buttons** to change the setting.

| Display Indicator | Meaning |
|---|---|
| 4 | Quantize quarter notes (initial value) |
| 8 | Quantize 8 th notes |
| 8 T | Quantize 8 th triplicate notes |
| 1 6 | Quantize 16 th notes |
| 1 6 T | Quantize 16 th triplicate notes |
| 3 2 | Quantize 32 nd notes |
| 3 2 T | Quantize 32 nd triplicate notes |
| 6 4 | Quantize 64 th notes |

## Quantize Execute (⑥)

Use this procedure to execute the quantize setting made under "Record Quantize Setting (⑤)" on this page.

$$Qtz\ Exe?$$

1. Use the [ ◀ ] and [ ▶ ] **CURSOR keys** to display the "Qtz Exe?".
   • A message appears to confirm whether you want to execute.

2. Press the **YES button** to execute or the **NO button** to abort the operation.
   • Pressing the YES button causes the message "qt Pls Wait" to appear for about one second. Next, the display returns to the record/playback mode.

$$qt\ Complete$$
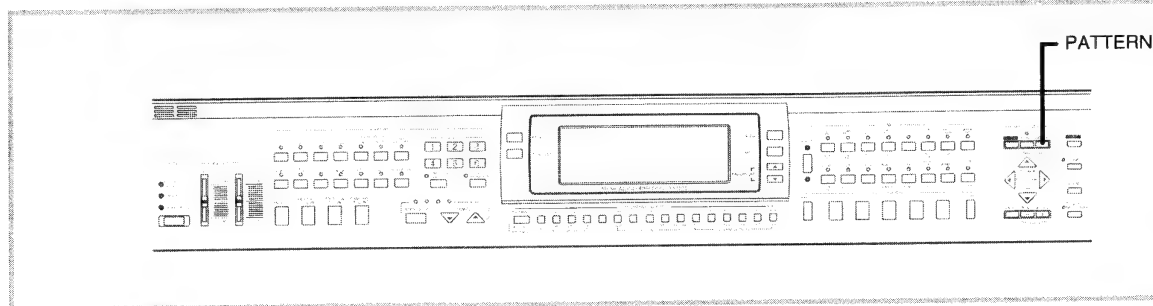
# Pattern Sequencer

The Pattern Sequencer lets you modify the keyboard's 72 built-in Auto Accompaniment patterns or create your own original pattern from scratch.

## Pattern Sequencer Basics

Each Auto Accompaniment pattern is actually a group of six different elements named: normal, intro, variation, normal fill in, variation fill in, and ending. Each element is made up of five parts, named: Rhythm, Bass, Chord 1, Chord 2, and Chord 3. The following table shows the makeup of each element.

| Element | Parts | | | | |
|---|---|---|---|---|---|
| Intro | Rhythm | Bass | Chord 1 | Chord 2 | Chord 3 |
| Normal | Rhythm | Bass | Chord 1 | Chord 2 | Chord 3 |
| Variation | Rhythm | Bass | Chord 1 | Chord 2 | Chord 3 |
| Normal fill-in | Rhythm | Bass | Chord 1 | Chord 2 | Chord 3 |
| Variation fill-in | Rhythm | Bass | Chord 1 | Chord 2 | Chord 3 |
| Ending | Rhythm | Bass | Chord 1 | Chord 2 | Chord 3 |

## Pattern Sequencer Recording Contents

The Pattern Sequencer lets you record notes for each of the parts that makes up an element. You can alter any of the elements of a built-in Auto Accompaniment, or you can create one or more of your own original elements from scratch.

### Content that can be recorded to each part within each element using real-time recording

- Notes played on the keyboard
- Pedal operation

### Content that can be recorded once for each pattern

- Tempo
- Beat (Only when work area is empty.)

### Content that can be recorded to each element

- Number of measures
  The number of measures for Intro, Normal, Variation, and Ending can specified only when recording to a blank element. Fill-in is always one measure long, and cannot be changed.
- Original key

### Content that can be recorded to each part of each ment

- Tone (TONE button or Mixer function setting. Cannot change side element.)
- Pan (Set using Mixer.)
- Effect send (Set using Mixer.)
- Expression (Set using Mixer.)
- Chord conversion table
- Break point

## Pattern Sequencer Memory Capacity

Approximately 7,000 notes
- The measure number (item 12 on page E-14) and beat number (i 11 on page E-14) flashing on the display during recording i cates that memory is almost full (space for about 100 notes or remaining).
- Recording stops automatically as soon as memory becomes fu

### Element Display Indicators

| Indicator | Element | How to Select |
|---|---|---|
| nor | Normal | Press the NORMAL/FIL IN button to toggle betwe normal and normal fill in |
| FLn | Normal Fill-In | |
| uAr | Variation | Press the VARIATION/FII IN button to toggle betwe variation and variation fill |
| FLu | Variation Fill-In | |
| int | Intro | Press the INTRO button. |
| End | Ending | Press the SYNCHRO/EN ING button. |

Normal **Unlit**

```
RHYTHM  2  8Beat
```
— SEQUENCER —
○ ○
RECORD SONG PATTERN

↓ Press the PATTERN button.

Pattern Create Mode **Lit**

```
Ptn Normal
```
— SEQUENCER —
○ ●
RECORD SONG PATTERN

Press the ENTER button. ↑    Press the PATTERN button. ↓

Pattern Edit Mode **Flash**

```
Edt Escape  [▼]⇄[▲]  Edt Global  [▼]⇄[▲]  Edt Element  [▼]⇄[▲]  Edt Part
```
— SEQUENCER —
○ ○
RECORD SONG/CURSOR PATTERN

↓ Press the PATTERN button.

**Flash**

```
Save?
```
— SEQUENCER —
○ ☀
RECORD SONG PATTERN

Press the PATTERN button.
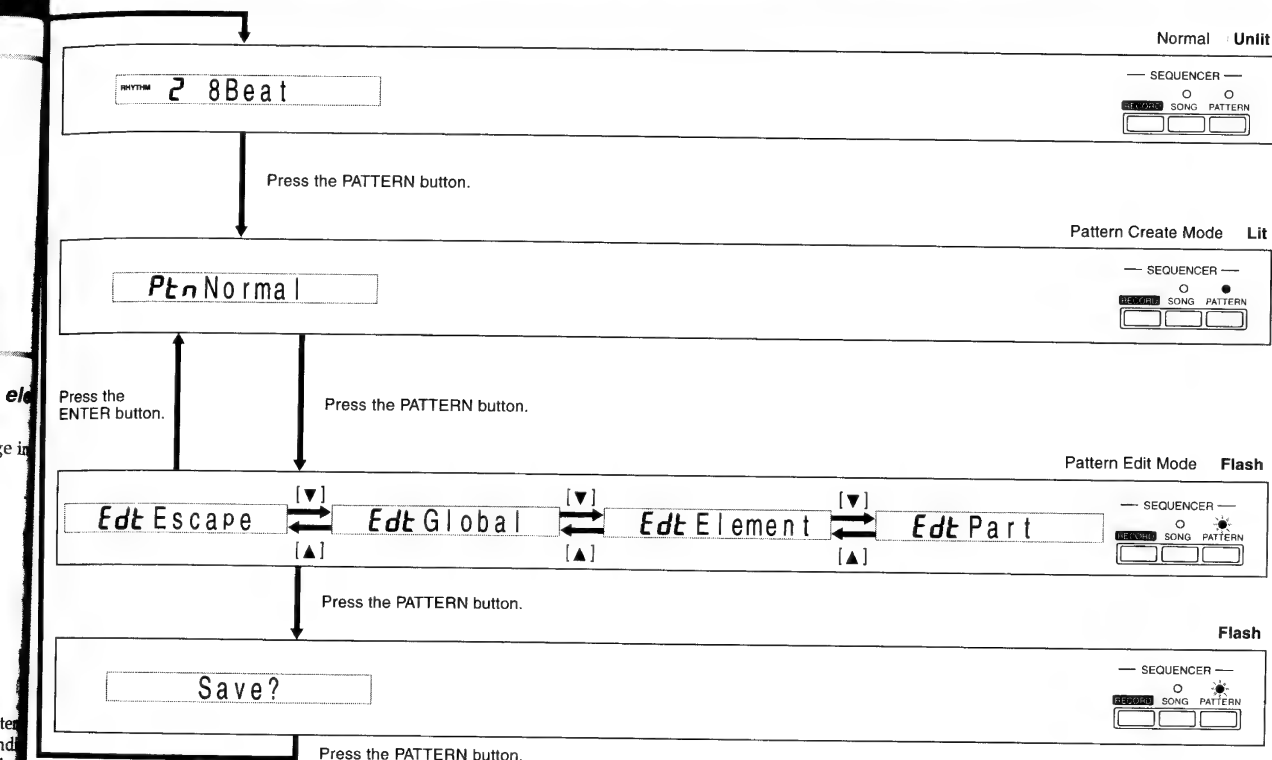
The Pattern Sequencer has two modes: a Pattern Create Mode for recording a new pattern, and a Pattern Edit Mode for changing the settings of a pattern.
After you finish creating or editing a pattern, you store it in memory and assign it a number for later recall.

The following procedure provides the basics for navigating between Pattern Sequencer modes.

## To navigate between Pattern Sequencer modes

1. Before turning on the Pattern Sequencer, select the rhythm you want to use as a base for your original rhythm.

2. Press the **PATTERN button.**
   • This enters the Pattern Create Mode, which is indicated when the indicator lamp above the PATTERN button is lit. The indicator "Ptn" in the tone/rhythm number area of the display (item 2 on page E-14) also indicates that the Pattern Create Mode.
   • Entering the Pattern Create Mode copies the rhythm you selected in Step 1 into the Song Sequencer work area. Operations you perform with the Pattern Sequencer affect the pattern that is currently in the work area.
   • If the rhythm pattern you selected in step 1 is too large to fit in the work area, the Message "Ptn Mem Full" appears on the display for about three seconds. After that, the piano enters to the Pattern Create Mode with the work area empty. To make more room in the work area for the rhythm pattern, delete user rhythm patterns stored in the user area (pattern numbers 100 through 109) that you no longer need.
   • In the Pattern Create Mode, you can play back the accompaniment pattern in the work area and even record along with the playback. See "Using the Pattern Create Mode" on page E-54 for full details on using the Pattern Create Mode.

3. Press the **PATTERN button** again.
   • This enters the Pattern Edit Mode, which is indicated when the indicator lamp above the PATTERN button is flashing. The indicator "Edt" in the tone/rhythm number area of the display (item 2 on page E-14) also indicates the Pattern Edit Mode.
   • The Pattern Edit Mode screen can be scrolled between the following three menus with the [▲] and [▼] CURSOR keys: "Global", "Element", and "Part". In addition to the menus, there is also an Escape screen for exiting the Pattern Edit Mode. Each contains parameters for making settings for the accompaniment pattern in the Pattern Sequencer work area. See "Using the Pattern Edit Mode" on page E-56 for full details on using the Pattern Edit Mode.
   • Displaying the Pattern Edit Mode's "Escape" screen and then pressing the ENTER button returns to the Pattern Create Mode in step 2.

4. Press the **PATTERN button** again.
   • The indicator lamp above the PATTERN button continues to flash, and the message "Save?" appears on the display. See "Exiting the Pattern Sequencer Mode" on page E-60 for details on how to save Pattern Sequencer data.

**＊ Work Area**

• The work area is an area of memory where rhythm pattern data is stored temporarily during recording and editing. After you are finished recording or editing, you can specify whether you want to save work area contents or delete them without saving.

RECORD
PATTERN
START/STOP
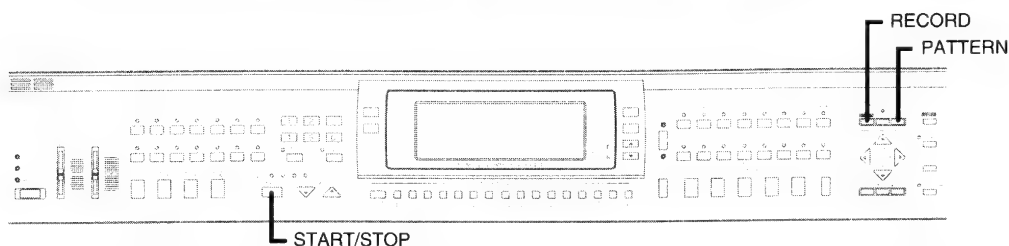
## Saving an Edited Pattern

- You can recall a user rhythm with the same operation as that for recalling a built-in pattern, and you can even use a user rhythm pattern as the base for creating a new rhythm pattern.
- This piano comes with a built-in lithium battery that supplies power to the memory to retain memory contents while keyboard power is turned off. See "Power Requirements" on page E-17 for important information about the lithium battery.
- You can use this piano's MIDI capabilities to save your original accompaniment patterns to a computer or other external storage device. See "Bulk Sending Piano Data" on page E-76 for details.
- With the piano you can use the built-in disk drive to save original accompaniment patterns to diskette. See "Using the Floppy Disk Drive" on page E-63 for details.
- You can store up to 6 accompaniment patterns in the user area, but the actual number of patterns you will be able to store depends on their sizes. If the patterns you store are relatively large, memory become full after fewer than 6 patterns are stored.

## Using the Pattern Create Mode

This section describes how to use the Pattern Create Mode to create an original accompaniment pattern.

===== **IMPORTANT!** =====

The procedures in this section all assume that you have read and are familiar with the information under "Pattern Sequencer Basics" on page E-52, and that you already know how to navigate between Pattern Sequencer modes.

## Pattern Creation Techniques

You can use either of the two following techniques to create an accompaniment pattern.

- Base Pattern Editing
  While playing back the part of a built-in pattern or previously created user pattern, you can add or delete notes, or completely delete a part and replace it with a new one.

- From Scratch
  With this method, you must input all the parts for all the elements you want to use. With this method, you must use the procedure under "Work Area Clear" on page E-58 to clear the Pattern Sequencer work area before you start recording.

The record procedure is identical, no matter which of the above methods you use.
The following procedure tells you how to play back individual elements of the accompaniment pattern currently stored in the Pattern Sequencer work area. If you are going to use the base pattern editing method described above, you can use this procedure to become familiar with all the parts that make up the pattern before you actually start editing it.

## To play back elements of the accompaniment pattern in the work area

1. While the Pattern Sequencer is turned off, press the PATTERN button once to enter the Pattern Create Mode.

Indicates the Pattern Create Mode. | Indicates the currently selected element.
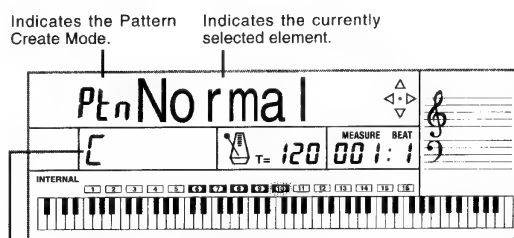


Original Key

2. Select the element you want to play back.
   - The Normal element is always selected first when you initially turn on the Pattern Sequencer.
   - Use the following buttons to select the other elements.
     NORMAL/FILL-IN ...... Toggles between Normal and Normal Fill-In elements.
     VARIATION/FILL-IN .. Toggles between Variation and Variation Fill-In elements.
     INTRO ........................... Selects Intro element.
     SYNCHRO/ENDING ... Selects Ending element.

3. Press the START/STOP button.
   - The selected element plays in a loop, repeating itself.
   - The display shows measure and beat numbers during element playback.
   - You can perform the following operations during element playback.
     - Tempo changes
     - Part on and off
     - Tone operations
     - Mixer operations*1

4. To stop playback, press the START/STOP button again.

*1 The CURSOR keys and ENTER button function as Mixer operation buttons during playback. Auto Accompaniment uses internal channels CH6 through CH10, which can be used when making part settings. See "Changing the Parameters of a Channel" on page E-40 for details on using the Mixer to make settings.

**NOTES**
- Pressing the PATTERN button while a pattern is playing stops accompaniment playback and enters the Pattern Edit Mode.
- Use the Mixer to adjust the volume balance between channels. First the Global Volume parameter to 127. Next, adjust the Expression rameter volume balance. See "Additional Channel Mode Parameter on page E-42 for details.

## To record an accompaniment pattern

### PREPARATION

- Select the accompaniment pattern (rhythm) that you want to use as a base.
- Use the procedure under "To play back elements of the accompaniment pattern in the work area" on page E-54 to play back the pattern and become familiar with its elements and parts. During playback, you can practice playing the notes you plan to record.
- Determine the number (100 to 109) you will assign to the new pattern.
- If you want to use the metronome, use the procedure under "Metronome Setting" on page E-57 to select the metronome setting you want.
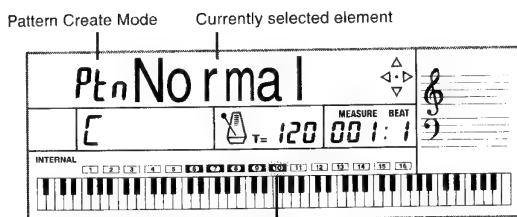
=== IMPORTANT! ===

You cannot record accompaniment patterns converted using the Pattern Conversion Disk. See "Using the Utillities" on page E-68 for details.

**▮ NOTE ▮**

If you playback the base pattern before recording, skip step 1 in the following procedure.

*1.* While the Pattern Sequencer is turned off, press the **PATTERN button** once to enter the Pattern Create Mode.



Pattern Create Mode    Currently selected element

Frames around the channel numbers that correspond to the currently selected parts flash.

*2.* Select the element and tone you want to record.
- Use the same procedures as those described for step 2 under "To play back elements of the accompaniment pattern in the work area" on page E-54.

● **To record the Rhythm part**

Select a drum sound. Use the DRUM SET TONE button or tone number 192 through 199.

● **To record the Bass part**

Select a bass tone.

● **To record Chord 1, 2, and 3 parts**

Select a chord tone. Use any tone besides the drum sounds.

*3.* Press the **RECORD button** to enter record standby.
- This causes the REC indicator to appear on the display.
- If the accompaniment pattern is once converted using the Pattern Conversion Disk, the message "NotCASIO" appears on the display, indicating that it cannot be recorded.

*4.* Select the parts you want to record.
- The Rhythm part (CH10) is selected initially whenever you turn on the Pattern Sequencer. Use the CHANNEL buttons CH6 through CH10 to select parts.
- The frames around the channel numbers that conform to the currently selected parts flash to show they are selected.
- Note that you cannot select parts once recording starts. Be sure to select the parts you want before you start recording.

*5.* Press the **START/STOP button**.
- At this time the REC indicator stops flashing.
- All parts of the selected element play back in an endless loop. You can record notes in the currently selected parts.
- Measure and beat numbers are shown on the display during recording.
- Pressing any keyboard key starts actual recording.

*6.* Record in part in sequence.
- You can perform the following operations during element recording.
  - Turn parts (channels) to be recorded on and off
  - Tempo changes

● **To record the Rhythm part**
- Press the CHANNEL button CH10 to select the rhythm part.
- Use the keyboard to play the rhythm part. Use the measure and beat values that appear on the display for timing.

● **To record the Bass part**
- Press the CHANNEL button CH9 to select the bass part.
- Use the keyboard to play the bass part. Use the measure and beat values that appear on the display for timing.

● **To record Chord 1, 2, and 3 parts**
- Use the CHANNEL buttons CH6, CH7, and CH8 to select a chord part.
- Use the keyboard to play the chord part. Use the measure and beat values that appear on the display for timing.

*7.* After you finish recording, press the **START/STOP button** again.
- This stops recording, which causes the REC indicator to disappear from the display.

*8.* Repeat steps 2 through 7 for each of the elements of the accompaniment pattern.

*9.* See "To exit the Pattern Sequencer Mode and save work area contents" on page E-60 for details on how to save patterns.
- If you want to turn off the Pattern Sequencer without saving anything, perform the procedure under "To exit the Pattern Sequencer Mode without saving work area contents" on page E-61.

**▮ NOTES ▮**

- You cannot change the selected parts and element while recording is in progress.
- If you are having problems getting the timing right when trying to input notes starting from the first beat of the first measure, skip step 5 (pressing the START/STOP button) of the above sequence. As soon as you play something on the keyboard, recording starts right at the first beat of the first measure.
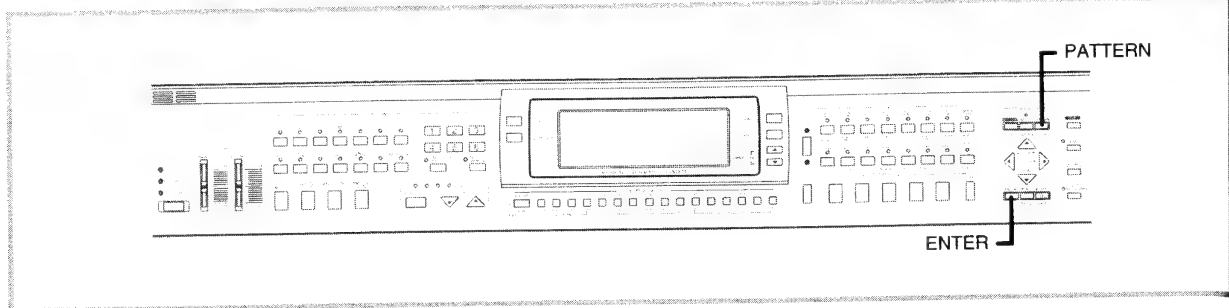
## To delete specific notes

- Play the accompaniment pattern.
- While holding down the [+] and [−] buttons, press the keyboard key that corresponds to the note you want to delete at the time the note sounds in order to delete it. To get the timing right, you probably should press the keyboard key just before the note sounds. This will delete that single note only.

## To delete a part

- During record standby, select the part you want to delete and then press the [+] and [−] buttons at the same time. In response to the message "dEL Sure?" that appears on the display, press the YES button to delete all of the contents of the part or the NO button to abort the delete procedure without deleting anything.

## Using the Pattern Edit Mode

This section describes how to use the Pattern Edit Mode to change various settings for a pattern you are currently creating or are about to create.

=========== **IMPORTANT!** ===========

The procedures in this section all assume that you have read and are familiar with the information under "Pattern Sequencer Basics" on page E-52, and that you already know how to navigate between Pattern Sequencer modes.

## To select main menus and sub-menus in the Pattern Edit Mode

1. While in the Pattern Create Mode, press the **PATTERN button** once to enter the Pattern Edit Mode.
   - This causes the indicator lamp above the PATTERN button to flash, and the Global menu to appear on the display.

Pattern Edit Mode     Menu title (Global in this case).

EdtGlobal

Original key     Tempo display

Currently enabled CURSOR keys
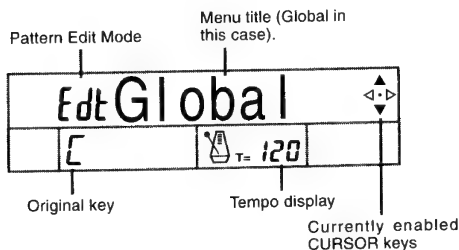
2. Perform the key operations described below to display a different main-menu or sub-menu.
   - Use the [▲] and [▼] CURSOR keys to move between main-menus.
   - Press the ENTER button, [◄], or [►] CURSOR key to scroll through the sub-menu of the current main-menu. The sample display below is the Global menu's metronome sub-menu.

Global menu     Abbreviation of sub-menu name     Current setting of displayed sub-menu

GlbMetr=Off

Original key
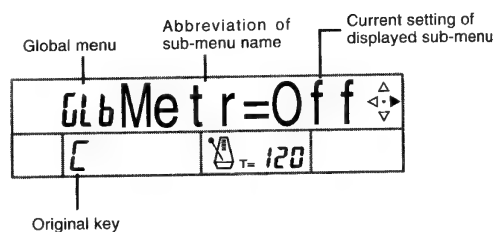
   - Use the [+] and [−] buttons to change the setting of the sub-menu on the display.
   - To return to a main menu from one of its sub-menus, press the ENTER button.

3. To return to the Pattern Create Mode, maneuver to the "Escape" screen and then press the **ENTER button**.

# Main-menu and Sub-menu Screens
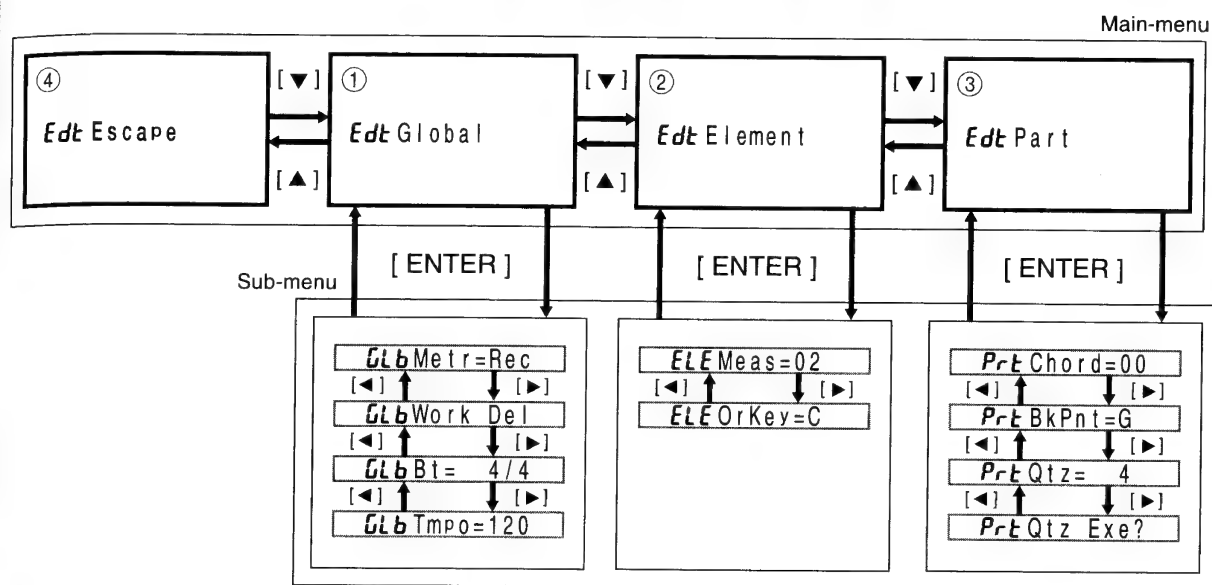
Main-menu



The above shows the main-menu and sub-menu screens. The text inside the frames are the main-menu and sub-menu names that appear on the display.

## ① Global Menu

This menu is for making settings that affect all sub-menus that make up the accompaniment pattern. The letters "GLb" indicate the Global menu, while the other letters are abbreviations of sub-menu names, as listed below.

- Metr .......... Metronome
- Work Del ... Work area clear (All Delete)
- Bt ............... Meter (Beat)
- Tmpo ......... Tempo

For details on what each sub-menu controls and its available settings, see "Global Setting Sub-menus" on this page.

## ② Element Menu

This menu is for making settings for individual elements that make up an accompaniment pattern. The letters "ELE" indicate the Element menu, while the other letters are abbreviations of sub-menu names, as listed below.

- Meas ........ Measure
- OrKey ...... Original Key

For details on what each sub-menu controls and its available settings, see "Element Sub-menus" on page E-59.

## ③ Part Menu

This menu contains sub-menus for specifying how chords played on the accompaniment keyboard will be sounded during pattern playback. Settings can be made for each part of an accompaniment pattern. The letters "Prt" indicate the Part menu, while the other letters are abbreviations of sub-menu names, as listed below.

- Chord .......... Chord conversion table
- BkPnt ........... Break point
- Qtz ............... Quantize
- Qtz Exe? ....... Quantize Execute

For details on what each sub-menu controls and its available settings, see "Part Sub-menus" on page E-59.

## ④ Escape Screen

When this screen is on the display, press the ENTER button to return to the Pattern Create Mode.

# Global Setting Sub-menus

After displaying the Global menu in the Pattern Edit Mode, use the [◀] and [▶] CURSOR keys to scroll through the Global sub-menus.

## Metronome Setting

This setting controls whether or not the metronome sounds during pattern recording and playback.



| Display Indicator | Meaning |
| --- | --- |
| Off | Metronome off |
| Rec | Metronome sounds during recording only (initial default setting) |
| R & P | Metronome sounds during recording and playback |

Metronome sound: The first beat is a chime, followed by a standard metronome click for the other beats.

CURSOR

[+]/[−]
(YES/NO)
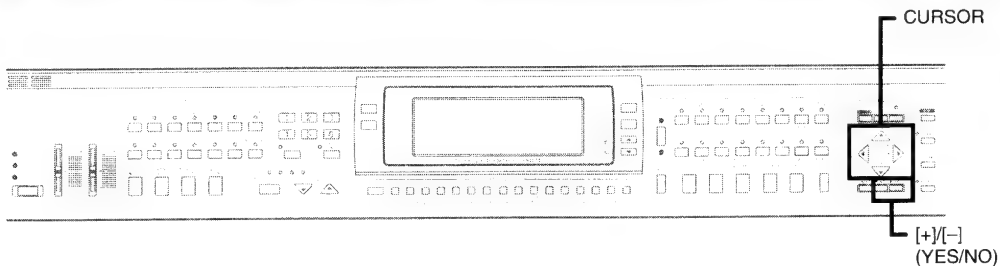
## Work Area Clear

Use this operation to clear Pattern Sequencer work area contents. You must clear the work area when you plan to create an original accompaniment pattern from scratch.

**GLb Work Del**

1. In the Global menu, use the [◄] and [►] **CURSOR keys** to display the "Work Del" screen, and then press the [+] and [−] **buttons** at the same time.

**dEL Sure?**

- This message confirms whether or not you really what to clear work area contents.

2. Press the **YES button** to clear work area contents or the **NO button** to abort the clear operation without clearing anything.
   - The message shown below appears for about one second and then the display returns to the Global menu.

**dEL Complete**

## Meter (Beat)

This setting specifies the meter of the accompaniment pattern.

**GLb Bt = 4/4**

The display shown here appears when you specify a meter that is not included in the table below.

**GLb Bt = − − − −**

You can set the meter immediately after clearing the Pattern S quencer work area only (see above). In other cases, the meter of t accompaniment pattern currently in the work area is used, and ca not be changed. In this case the display does not flash.

| Setting | Setting |
|---|---|
| 2 / 4 | 3 / 8 |
| 3 / 4 | 5 / 8 |
| 4 / 4 (initial value) | 6 / 8 |
| 5 / 4 | 7 / 8 |
| 6 / 4 | 9 / 8 |
| 7 / 4 | |

- Use the [+] and [−] buttons to change the setting.

## Tempo

This setting specifies the initial tempo value for the accompanime pattern.

**GLb Tmpo 120**

- Use the [+] and [−] buttons to set the initial tempo value within t range of 030 to 255.
- If the accompaniment pattern is playing when you change this s ting, the tempo of the pattern does not change immediately. Th value you specify becomes the current pattern's default tempo va ue, so you need to press both TEMPO buttons at the same time have the newly set tempo take effect for an ongoing pattern.

**❙ NOTE ❙**

When you turn on the Pattern Sequencer, the initial default temp value of the accompaniment pattern you are using as a base is a plied first.

## Element Sub-menus

After displaying the Element menu in the Pattern Edit Mode, use the [◀] and [▶] CURSOR keys to scroll through the Element sub-menus.

### Setting the Number of Measures for Each Element

You can specify the number of measures for each element (except for the fill-in element) of an accompaniment pattern before you start recording it.

$$E L E \, M e a s = 02$$

=== **IMPORTANT!** ===

You can specify the number of measures for each element only in the following cases.
- Immediately after clearing Pattern Sequencer work area contents (page E-58).
- After all the parts of the element whose number of measures you want to change have been deleted using the Pattern Create Mode.

In all other cases, the number of measures that is pre-programmed for the base accompaniment pattern cannot be changed.

- Use the [+] and [–] buttons to input a value of 01 to 16 for the number of measures.

### Setting the Original Key for Each Element

You can set the basic key for each element when recording an accompaniment pattern. The default setting for the original key is C.

$$E L E \, O r K e y = C$$

When you play the chord that is set as the element's original key while playing back an accompaniment pattern, all notes recorded on the element are played back exactly as they are recored (and are not affected by chord conversion table).

**❚ NOTES ❚**
- You can change the Original Key setting for each element in the following cases only.
  - Immediately after clearing the Pattern Sequencer work area.
    See "Work Area Clear" on page E-58 for details on the work area clear operation.
  - After all parts of the element whose Original Key you want to change have been deleted using the Pattern Create Mode (page E-54).
  In all other cases, the Original Key setting of the accompaniment pattern used as the base pattern is used, and cannot be changed. In this case the display does not flash.
- Set the original key to C if you want your pattern to be compatible with built-in patterns.

| Setting | Setting |
|---------|---------|
| C | F♯ |
| C♯ | G |
| D | A♭ |
| E♭ | A |
| E | B♭ |
| F | B |

- Use the [+] and [–] buttons to change settings.

## Part Sub-menus

After displaying the Part menu in the Pattern Edit Mode, use the [◀] and [▶] CURSOR keys to scroll through the Part sub-menus.

### Part Settings

All Part menu settings can be made separately for each part. The following shows which parameters can be set for each part.

| | Rhythm | Bass | Chord 1 | Chord 2 | Chord 3 |
|---|--------|------|---------|---------|---------|
| Chord Conversion Table | ✕ | ○ | ○ | ○ | ○ |
| Break Point | ✕ | ○ | ○ | ○ | ○ |
| Quantize Setting | ○ | ○ | ○ | ○ | ○ |
| Quantize Execute | ○ | ○ | ○ | ○ | ○ |

See "To play back elements of the accompaniment pattern in the work area" on page E-54 for details on how to select elements and parts to make settings.

### Accompaniment Pattern Playback During Part Setting

Pressing the START/STOP button while setting Part menu parameters starts playback of the Auto Accompaniment pattern, so you can immediately hear how a change in a parameter affects the accompaniment. You can perform the following operations while Auto Accompaniment is playing.

- You can specify chords using the chord play method (CASIO CHORD, FINGERED, FULL RANGE CHORD) that suits the accompaniment mode selected with the MODE button.
- You can change sub-menu settings, and immediately hear how changes affect the accompaniment pattern.

### Chord Conversion Table Sub-menu

Use this sub-menu to specify the chord conversion table of the accompaniment pattern for each part of an element.

$$P r t \, C h o r d = 00$$

Accompaniment patterns are normally recorded in the key of C. When you select an accompaniment pattern and specify a key by with the accompaniment keyboard, the pattern is transposed from the key of C to the specified key. Simply transposing chords on a one-to-one basis, however, can result in mechanical, unnatural sounding patterns. To compensate for this, the piano has 19 built-in chord conversion tables that make chord progressions in different keys sound more natural.

- Select the part of an element whose setting you want to change, and then use the i tasti [+] and [–] buttons to specify a value in the range of 00 to 18, which specifies the chord conversion table number.
- See "Chord Conversion Table" on page E-62 for details on chord conversion table numbers and contents.

### Break Point Sub-menu

Use this sub-menu to specify the break point of the accompaniment pattern for each part of an element.

$$P r t \, B k P n t = G$$

RHYTHM — RHYTHM SELECT — CURSOR — PATTERN — ENTER — [+]/[−] (YES/NO)
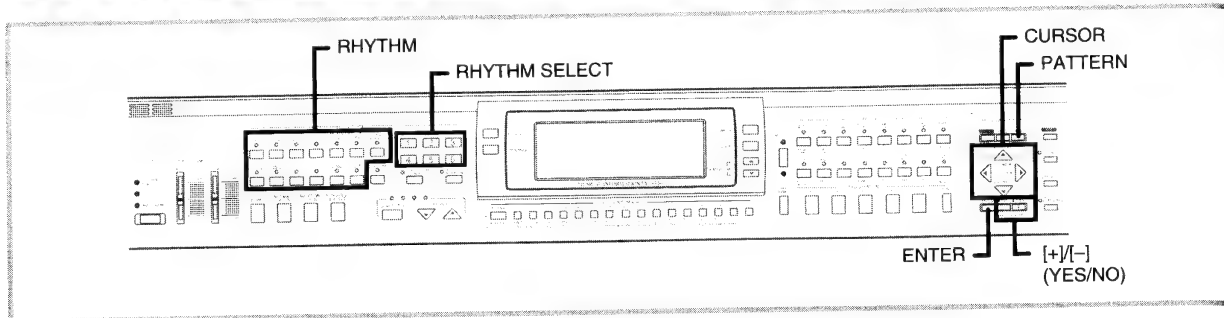
## * Break Point

- Once you specify a break point, any chord above the break point is played in the next lower octave when playing back chords using CASIO CHORD, FINGERED, and FULL RANGE CHORD.

| Setting | | Setting |
|---------|---|---------|
| C | | F# |
| C# | | G |
| D | | A♭ |
| E♭ | | A |
| E | | B♭ |
| F | | B |

- Use the [+] and [−] buttons to change settings.

## Quantize Setting

This setting determines the quantize value after recording. The timing of notes previously recorded from the keyboard can be matched with the note timing made with this setting.
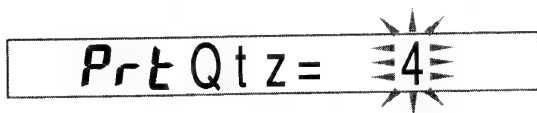
$$Prt\ Qtz = 4$$

| Display Indicator | Meaning |
|-------------------|---------|
| 4 | Quantize quarter notes (initial value) |
| 8 | Quantize 8 th notes |
| 8 T | Quantize 8 th triplicate notes |
| 1 6 | Quantize 16 th notes |
| 1 6 T | Quantize 16 th triplicate notes |
| 3 2 | Quantize 32 nd notes |
| 3 2 T | Quantize 32 nd triplicate notes |
| 6 4 | Quantize 64 th notes |

**▮ NOTE ▮**
The length of the last note of the accompaniment pattern you create may be altered by the quantize setting.

## Quantize Execute

Use the following procedure to execute the quantize operation in accordance with current quantize settings.
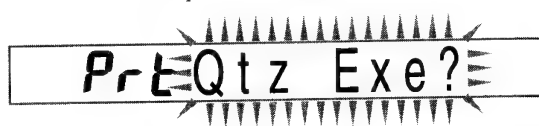
$$Prt\ Qtz\ Exe?$$

1. In the Global menu, use the [ ◀ ] and [ ▶ ] **CURSOR keys** to display the message "Prt Qtz Exe?"

2. Press the **YES button** to execute the quantize operation or the **NO button** to abort the operation.
   - Pressing the YES button causes the "qt Pls Wait" message to appear and remain on the display until the quantize operation is complete. The message shown below appears for about 1 second after the quantize operation is complete. Then the piano returns to the part menu.

$$qt\ Complete$$
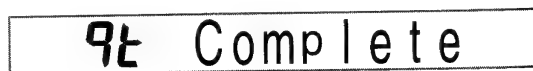
## Exiting the Pattern Sequencer Mode

Use the following procedures to exit the Pattern Sequencer Mode. The procedure you should use depends on whether you want to save or discard the contents of the work area.

## To exit the Pattern Sequencer Mode and save work area contents

**▮ NOTE ▮**
Perform this operation only after you have finished creating the pattern you want to save.

1. Press the **PATTERN button**.
   - This causes the message shown below to appear, which asks if you want to save work area contents.
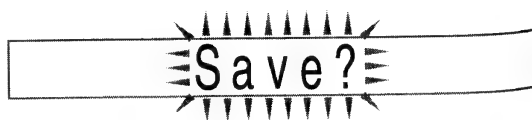
$$Save?$$

2. Press the **YES button** to save the pattern.
   - See "To exit the Pattern Sequencer Mode without saving work area contents" on page E-61 for details on what how to exit without saving.

E-60

660A-E-0

3. Use the [+] and [–] **buttons** to specify the user rhythm number where you want to save the pattern, and then press the **ENTER button**.

$$No. = \quad 1$$
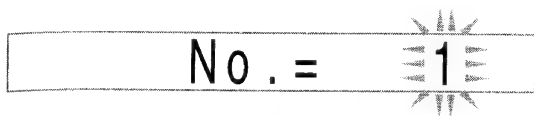
4. Press the [ ◀ ] or [ ▶ ] **CURSOR key** to move the cursor to the rhythm name input area, and input a name for the rhythm.
   - Use the [+] and [–] buttons to scroll through letters at the current cursor location.
   - Use the [◀] and [▶] CURSOR keys to move the cursor left and right.

$$\textit{I} \ USER1 \qquad \triangleleft \overset{\triangle}{\underset{\triangledown}{\cdot}} \triangleright$$

5. After you are finished inputting the name, press the **ENTER button** to save the rhythm pattern under the name you specified.
   - The message "Complete" appears on the display for about one second, and then the Pattern Sequencer turns off. The currently selected rhythm at this time is the one you just saved.
   - If the rhythm number you specified already contains a rhythm, the message "Replace?" appears when you press the ENTER button in step 5 above, to ask whether you want to replace the existing rhythm with the new one. Press the YES button to replace or the NO button to return to step 1 of the above procedure so you can specify a different rhythm number.

## Letters and Numerals

The table below shows the letters and numerals that you can input for a rhythm name.

| A | B | C | D | E | F | G | H | I | J |
|---|---|---|---|---|---|---|---|---|---|
| K | L | M | N | O | P | Q | R | S | T |
| U | V | W | X | Y | Z | ! | # | $ | % |
| & | ' | ( | ) | — | @ | ^ | _ | { | } |
| ` | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 9 |   |   |   |   |   |   |   |   |   |

## To exit the Pattern Sequencer Mode without saving work area contents

1. Press the **PATTERN button**.
   - This causes the message shown below to appear, which asks if you want to save work area contents.

$$Save?$$

2. Press the **NO button**.

$$Delete?$$

   - The above message asks if you really want to delete work area contents.

3. Press the **YES button** to exit without saving work area contents, or the **NO button** to abort this operation and return to the Pattern Sequencer Mode.

## To recall your accompaniment pattern

1. Press the **RHYTHM button (USER RHYTHM)**.
   - This causes the indicator above the button to light. The number and name of the currently selected rhythm also appears on the display.

$$\textit{I} \ USER1$$

2. Use the **RHYTHM SELECT buttons** (1 through 6) to input the number of the rhythm you want.

## Chord Conversion Table

- The applicable chord conversion table depends on the particular combination of elements and parts. The symbol ○ in the table below indicates that a chord table is applicable, while × indicates that a chord table is not applicable.
- The explanations in the "Description" column all assume the following conditions for the recorded accompaniment pattern.

  Root: C
  Major chords, unless specified otherwise.

- The explanations in the "Description" column describe how the recorded accompaniment (12 notes from C to B) are modified when an accompaniment chord is specified.
- The shaded rows are the default numbers for each element and part.

| No. | Names | Element Names | | Part Names | | Description |
|---|---|---|---|---|---|---|
| | | Intro, Ending | Normal, Variation, Normal/Fill-in, Variation/Fill-in | Bass | Chord 1 Chord 2 Chord 3 | |
| 00 | Basic Bass | × | ○ | ○ | × | Normally used for the bass part. |
| 01 | 7th Bass | × | ○ | ○ | × | Used for a bass part recorded by a 7th chord. |
| 02 | Basic Chord | × | ○ | × | ○ | Normally used for the chord part. |
| 03 | Basic Chord2 | × | ○ | × | ○ | A variation of Number 02 with different conversion when Gm7/C is specified during accompaniment. |
| 04 | Variation Chord1 | × | ○ | × | ○ | Specifying a 7th chord during play transforms the 5th note of the scale to the 7th note of the scale. In the case of C7, for example, G becomes B♭. |
| 05 | Variation Chord2 | × | ○ | × | ○ | Variation of number 04 (Variation Chord 1) |
| 06 | 7th Chord | × | ○ | × | ○ | Used for the chord part when a 7th chord is recorded. |
| 07 | Minor Chord | × | ○ | × | ○ | Used for the chord part when a minor chord is recorded. |
| 08 | Major Phrase | × | ○ | × | ○ | Used for the chord part when a phrase is recorded in a major scale. |
| 09 | Minor Bass Phrase | × | ○ | ○ | × | Used for the bass part when a phrase is recorded in a minor scale. |
| 10 | Penta Phrase | × | ○ | × | ○ | Used for the chord part when a phrase is recorded in a penta scale (CDEGA). |
| 11 | Natural Minor | ○ | × | ○ | ○ | Transforms to natural minor when a minor chord is played. |
| 12 | Melodic Minor | ○ | × | ○ | ○ | Transforms to melodic minor (ascending) when a minor chord is played. |
| 13 | Harmonic Minor | ○ | × | ○ | ○ | Transforms to harmonic minor when a minor chord is played. |
| 14 | No Change | ○ | × | ○ | ○ | Original chord as recorded in response to chord that is played, without transformation to minor or major. |
| 15 | Melodic Minor 2 | ○ | × | ○ | ○ | Variation of number 12 (Melodic Minor). Playing a major chord causes recorded B♭ notes to be transformed to B, while playing a minor chord plays B♭ as it is. |
| 16 | Dorian Scale | ○ | × | ○ | ○ | Play of a minor chord is transformed to the Dorian scale. The Dorian scale lowers the major scale E and B one semitone. |
| 17 | Minor ► Major | ○ | × | ○ | ○ | Used for intro and ending recorded with minor chords. |
| 18 | Tension chord | × | ○ | × | ○ | Used for the tension chord part used in jazz, bossa nova, etc. |

# Using the Floppy Disk Drive

## Floppy Disk Drive Features

The piano comes with a built-in disk drive, which provides you with the capabilities described below.

• You can save sequencer and synthesizer data on a floppy diskette for long-term storage. When you need the data again, simply insert the diskette into the disk drive and load it.
• You can play back SMF (standard MIDI file) data created on a personal computer and saved to diskette.
• You can convert rhythm data saved to diskette from another make of electronic musical instrument (Roland, Technics) and save it as user rhythm data.

## About Floppy Diskettes

This section contains important information about handling diskettes. Be sure to read it before going any further.

## Floppy Diskette Precautions

================ **IMPORTANT!** ================

• Avoid the following locations when storing and using diskettes. Any of the conditions noted below can cause data stored on the diskette to become corrupted.
  • Near TVs, on top of audio equipment, or in any area exposed to magnetism. Take special care to keep diskettes away from any source of magnetism.
  • Areas exposed to direct sunlight, or subject to high humidity or temperature extremes.
• Failure to observe any of the following precautions can cause data stored on the diskette to become corrupted.
  • Never try to take a diskette apart.
  • Never open the shutter of the diskette or touch the film inside with your fingers.
  • Never bend a diskette or otherwise subject it to rough handling.
  • Affix labels in the spaces provided only, and do not affix labels on top of previous ones.
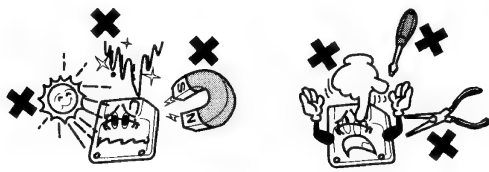


• Do not eject the diskette from the drive while the access lamp is lit or flashing or turn off piano power with a diskette in the drive. Doing either can cause data on the diskette to become corrupted and can even cause malfunction of the disk drive.
• Never insert any foreign objects into the disk drive. Doing so can cause it to malfunction.
• The disk drive uses a magnetic head. A dirty head cannot read data from a diskette properly and can corrupt existing data on the diskette. To avoid this, be sure to use a commercially available head cleaning diskette to periodically clean the head.
• Do not use a computer, another electronic musical instrument, or any other device to change a file name or file contents created with this piano. Doing so can make the data unusable by this piano and even cause malfunction of the piano.

Note that CASIO COMPUTER CO., LTD. shall not be held liable for any loss to you or any third party due to corruption or accidental erasure of data on a diskette.

## Diskette Types

The piano supports use of both 3.5" 2HD (1.44MB formatted) and 2DD (720KB formatted) diskettes. Use of other disk sizes and capacities is not supported.

### Diskette Type Indicators

2HD ..... A 2HD diskette is marked with the letters "HD" in the upper right corner of the front side. Also, there is a square hole in the lower right corner.
2DD ...... This type of diskette does not have a hole in the lower right corner.
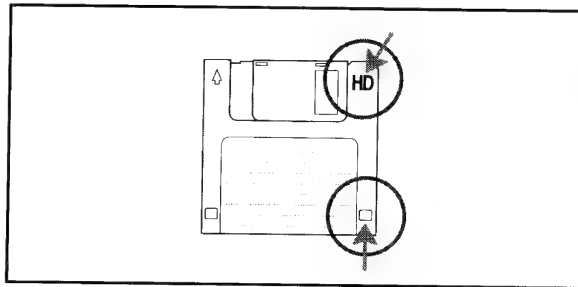


## Write Protection

================ **IMPORTANT!** ================

• You can write protect a diskette so data on it cannot be deleted and no new data can be stored on the diskette. Also, a write protected diskette cannot be formatted. You can read data from a diskette regardless of whether or not it is write protected.
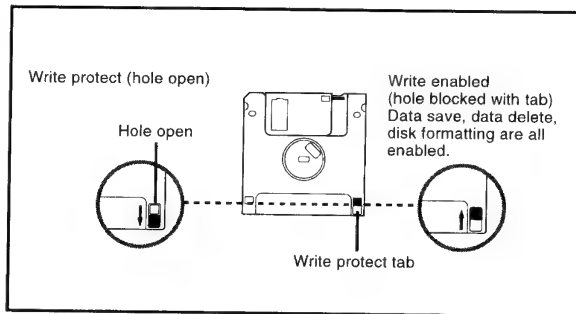


• When the write protect hole is open as shown in the illustration, you can read the contents of the diskette, but you cannot write data to or delete data from the diskette. After saving important data to a diskette, be sure to open its write protect hole to protect the data against accidental changes or deletion.
• The diskette that comes with the piano contains sample data and programs. It is write protected to avoid accidental erasure or formatting. Make sure you handle this diskette carefully to avoid damaging or erasing its data.

DISK — CURSOR — Access lamp

START/STOP — ENTER — [+]/[−] — Eject button
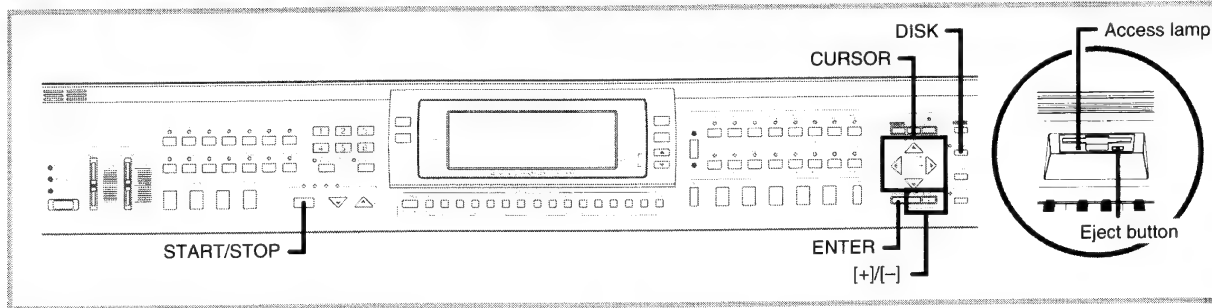
## Inserting and Ejecting a Diskette

The following describes how to insert a diskette into the disk drive and how to eject it.

### To insert a diskette into the floppy disk drive

*1.* With the label area of the diskette facing up, insert the diskette shutter first into the disk drive, as shown in the illustration.



*2.* Slide the diskette into the drive as far as it will go, until it clicks into place.

### To eject a diskette from the floppy disk drive

#### ═══ IMPORTANT! ═══

Before ejecting a diskette, always check to make sure that the access lamp is not lit or flashing. A lit or flashing access lamp means that the piano is performing a data read or write operation. Ejecting a diskette while it is being accessed can cause its data to become corrupted.

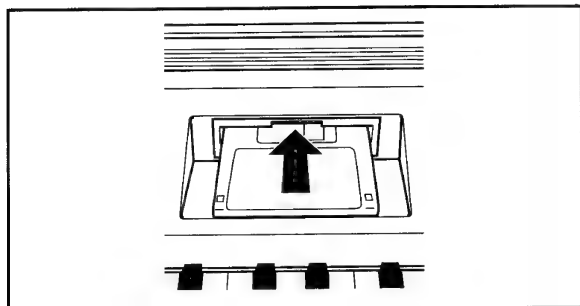*1.* Press the **Eject button**.
   • This causes the diskette to be partially ejected from the disk drive.

*2.* Remove the diskette from the drive by hand.

## Basic Diskette Operation

The following is the basic procedure when using a diskette.

*1.* Insert a diskette into the piano's disk drive.

*2.* Press the **DISK button**.
   • This causes the indicator lamp above the DISK button to light, which indicates the SMF Play Mode. See "Playing Back an SMF" on page E-65 for details on using this mode.

*3.* Press the **DISK button** again to display the first disk operation screen.
   • The indicator lamp above the DISK button flashes at this time.

*4.* Scroll through the disk operation screens.
   • Use the [▲] and [▼] CURSOR keys to scroll through the four available screens.
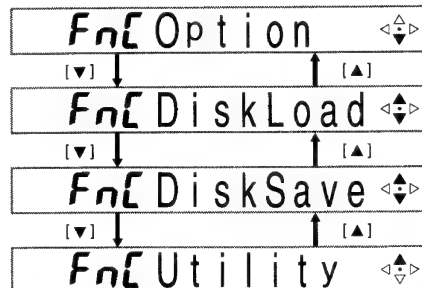


   • Option ... Use this screen to set SMF playback options. See "Playing Back an SMF" on page E-65.
   • DiskLoad ... Use this screen to load a file created with the piano. See "To load piano data from a diskette" on page E-67.
   • DiskSave ... Use this screen to save data created with the piano. See "To save piano data to diskette" on page E-66.
   • Utility ... Use this screen to access utilities that let you convert rhythm data, delete data from a diskette, and format a diskette. See "Using the Utilities" on page E-68.

*5.* Perform the operation for the displayed disk operation screen.
   • Use the [◀] and [▶] CURSOR keys to make settings.
   • See the sections that follow this procedure for full details on performing disk operations.

*6.* After you are finished, press the **DISK button**.
   • This causes the indicator lamp above the DISK button to go out.
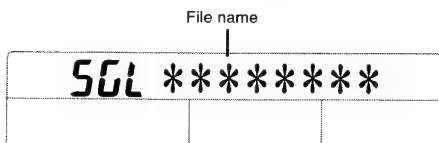
**❚ NOTE ❚**
You will be able to start the above procedure even when there is no diskette in the disk drive.

## Playing Back an SMF

SMF (standard MIDI file) is a data format that makes it possible to port MIDI data between sequencers and synthesizers of different type and brand. There are actually three different SMF formats, named 0, 1, and 2. This piano supports SMF Format 0, which is the most common. Most synthesizers, sequencers, and commercially available pre-recorded software and MIDI files use SMF Format 0.

The built in disk drive of the piano lets you play back files created with a personal computer or other device and saved to diskette.

### To play a specific file from diskette

1. Insert the diskette that contains the file into the piano's disk drive.
   - The diskette labeled "DISK-2" that comes with the piano contains files you can use for this procedure.

2. Press the **DISK button**.
   - This causes the indicator lamp above the DISK button to light, which indicates the SMF Play Mode.
   - At this time the name of one of the files contained on the diskette appears on the display.

3. Use the **[+]** and **[–] buttons** to select the file you want to play.

4. Press the **START/STOP button** to start play of the file whose name is flashing on the display.

File name

$$\boxed{5GL \ **********}$$

5. To stop file play, press the **START/STOP button** again.
   - File play also stops automatically when the end of the file is reached.

**❚NOTE❚**
After you stop file play part way through by pressing the START/STOP button, you can exit the file play mode by pressing the DISK button twice.
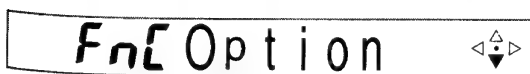
### To play back all files on a diskette

Insert the diskette that contains the files into the piano's disk drive.
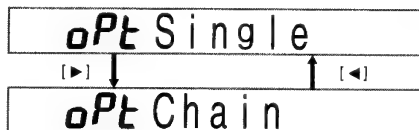
**PREPARATION**
The diskette that comes with the piano contains files you can use for this procedure.

1. Press the **DISK button** twice.
   - This causes the "Option" disk operation screen to appear on the display. The indicator lamp above the DISK button flashes at this time.

$$\boxed{Fn[ \ Option \qquad \triangleleft \overset{\triangle}{\underset{\triangledown}{\cdot}} \triangleright}$$

2. Use the **[◀]** and **[▶] CURSOR keys** to select the playback type.

$$\boxed{oP\boldsymbol{t} \ S i n g l e}$$
[▶] ↓         ↑ [◀]
$$\boxed{oP\boldsymbol{t} \ C h a i n}$$

   - Single … Plays the currently selected file only.
   - Chain … Plays back all files on the diskette.

3. While "Chain" is on the display, press the **ENTER button** to start playback.
   - The name of the file that is playing is shown on the display.

File name

$$\boxed{[Hn \ **********}$$
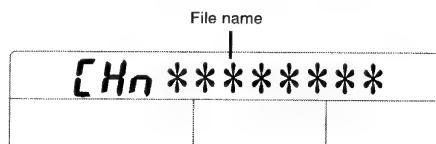
4. Press the **START/STOP button** to start playback.

5. To stop SMF play, press the **START/STOP button** again.
   - If you do not press the START/STOP button, SMF play plays one file after the other in an endless loop.

**❚NOTE❚**
After you stop SMF play part way through by pressing the START/STOP button, you can exit the disk operation screen by pressing the DISK button twice.

### Operations During Playback

You can change the following settings while a file is playing from diskette.

- Mixer settings (See "Mixer Function" on page E-39.)
- Tempo settings

**❚NOTES❚**
- Even after you make Mixer and tempo settings during SMF playback, they may change to other settings if the data in the file contains such settings.
- File data is played over External Channels.

## Saving and Recalling Memory Data

The built-in disk drive lets you save sequencer and other data from the piano's memory to diskette for later recall when you need it.

### Savable Data

The following is a list of piano data that can be saved to diskette.

(1) User rhythms created using the Pattern Sequencer
(2) User song data created using the Song Sequencer
(3) Setups saved in registration memory

- Saving rhythm or song data only causes each rhythm or song to be saved as a separate file.
- Saving registration memory data only causes all 20 setups (5 setups x 4 banks) in registration memory to be saved as a single file.
- Using the save all operation causes all the data currently in piano memory to be saved as a single file.

CURSOR
DISK
ENTER
[+]/[−]
(YES/NO)
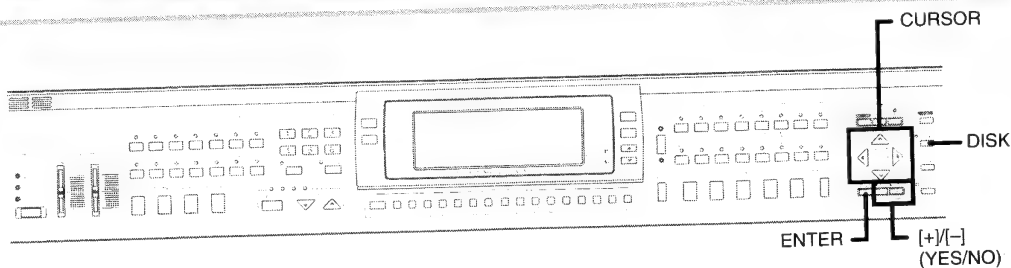
• You can save individual rhythms and songs in separate files only. You cannot save all rhythms, or both songs in a single file.
• All registration memory data can be batch saved in a single file only. You cannot save individual banks or setups.

### File Name Extensions

A three-letter extension is automatically added to file names to identify the type of data the file contains. The piano does not display extensions, but they will appear if you view the file names on a computer.

| No. | Data Type | Extension | Screen Indication | File Contents |
|-----|-----------|-----------|-------------------|---------------|
| 1 | Pattern Sequencer | CPT*1 | Pattern | Single user rhythm created with the Pattern Sequencer |
| | | EPT*1 | Pattern | Single user rhythm converted from data created on another make keyboard |
| 2 | Song Sequencer | CS2*2 | Song | Single user song created with the Song Sequencer |
| 3 | Registration | CR2*2 | Regist | 20 setups (5 setups x 4 banks) |
| 4 | Save All | CA2*2 | All | File produced by a save all operation |

*1 Pattern Sequencer data created on this piano can also be used by the CASIO CTK-811EX. The tones of this piano are replaced by the corresponding CTK-811EX tone numbers. The CTK-811EX does not have chord conversion table No.18. When such data produced on this piano is imported by the CTK-811EX, it is converted chord conversion table No.08.

| This piano | CTK-811EX |
|------------|-----------|
| TONE Button Tone ⟷ (Tone numbers 200 to 231) | User tones (Tone numbers 220 to 231) |
| Chord Conversion Table / No.18 → | Chord Conversion Table / No.08 |

*2 Song Sequencer, Registration, and Save All data cannot be used by the CTK-811EX.

## To save piano data to diskette

1. Check the data you want to save.
   • Make sure that everything is set up and configured the way you want to save it.

2. Insert the diskette to which you want to save the data into the piano's disk drive. At this time close the diskette's write protect tab to enable writing.

3. Press the **DISK button** twice.

4. Press the [▼] **CURSOR key** twice to display the "Disk Save" screen.

5. Use the [◄] and [►] **CURSOR keys** to display the screen for the type of data you want to save, and then press the **ENTER button**.
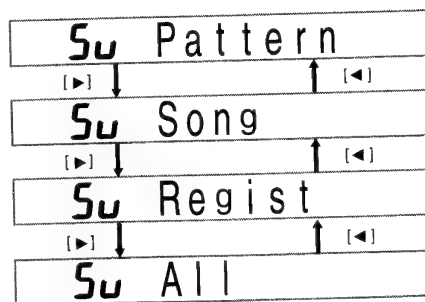


```
Su Pattern
      [►] ↓      ↑ [◄]
Su Song
      [►] ↓      ↑ [◄]
Su Regist
      [►] ↓      ↑ [◄]
Su All
```

   • The remainder of this example is based on selecting "Pattern" in the above step.

6. Specify the location (tone number) of the data you want to save, and then press the **ENTER button**.
   • Use the [+] and [−] buttons to increase and decrease the displayed number.
   • Skip this step if you are saving registration memory data or all data.

7. Input the name of the file.
   • Use the [+] and [−] buttons to scroll through letters at the current cursor location.
   • Use the [◄] and [►] CURSOR keys to move the cursor left and right.
   • See "Letters and Numerals" on page E-61 for information about the characters you can input.

8. After inputting the file name, press the **ENTER button** to start the save operation.
   - If the diskette already contains a file with the name you specified in step 7, the message "Replace?" appears, asking if you want to replace the existing file with the new one. Press the YES button to replace the existing file, or the NO button to return to step 7 of this procedure.
   - The message "Pls Wait" remains on the display while the file save operation is being performed.

=== **IMPORTANT!** ===

Do not perform any key operation while the message "Pls Wait" is on the display. In particular, never turn off piano power. Doing so can cause all data on the disk to become corrupted and unusable.

9. The message "Complete" appears on the display for about one second when the data save operation is complete.
   - The piano returns to step 5 of this procedure after the "Complete" message clears from the display.
   - Repeat steps 5 through 9 if you want to save more data.
   - After you finish your diskette operations, press the DISK button so the indicator lamp above it goes out. Next, press the eject button to eject the diskette, and then remove it by hand.

**❚NOTES❚**
- When saving registration memory data or all data, simply skip step 6 of the above procedure.
- See "Letters and Numerals" on page E-61 for the characters that can be input for the file name.
- We recommend that you make a separate record of the names of files and their contents to make it easier to find the data you need when you need it.
- To exit the disk operation screens at any time during the above procedure, press the DISK button so the indicator lamp above it goes out.
- When saving Pattern type data (single user rhythm), each file can hold a maximum of about 5,000 notes. To save a user rhythm pattern that has more than 5,000 notes, select All in step 5 of the above procedure to save all piano data. See "File Name Extensions" on page E-66 for details on the extensions appended to file names.

## To load piano data from a diskette

**❚NOTE❚**
The following procedure describes how to load a user tone as an example of the load operation. The procedures for loading other types of data is identical, except where noted.

1. Insert the diskette that contains the data you want to load into the piano's disk drive.

2. Press the **DISK button** twice.

3. Press the [▼] **CURSOR key** once to display the "Disk Load" screen.

4. Use the [◄] and [►] **CURSOR keys** to display the screen for the type of data you want to load, and then press the **ENTER button**.

```
Ld  Pattern
```
[►] ↓          ↑ [◄]
```
Ld  Song
```
[►] ↓          ↑ [◄]
```
Ld  Regist
```
[►] ↓          ↑ [◄]
```
Ld  All
```
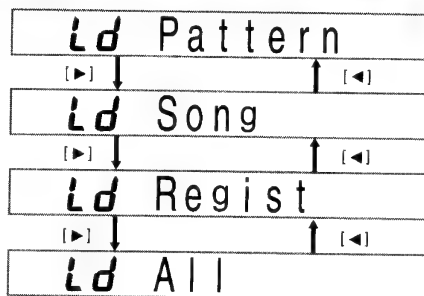
- Pressing the ENTER button causes the name of the first file of the type you specify to appear on the display.
- The remainder of this example is based on selecting "Pattern" in the above step.

5. Use the [+] and [–] **buttons** to display the name of the file you want to load, and then press the **ENTER button**.

6. Specify the location (tone number) where you want to store the data.
   - Use the [+] and [–] buttons to increase and decrease the displayed number.
   - Skip this step if you are saving registration memory data or all data.

7. Press the **ENTER button** to start the load operation.
   - If the tone number you specify already contains data, the message "Replace?" appears, asking if you want to replace the existing data with the loaded data. Press the YES button to replace the existing data, or the NO button to return to step 4 of this procedure.
   - The message "Pls Wait" remains on the display while the file save operation is being performed.

=== **IMPORTANT!** ===
Do not perform any key operation while the message "Pls Wait" is on the display. In particular, never turn off piano power. Doing so can cause all data on the disk to become corrupted and unusable.

8. The message "Complete" appears on the display for about one second when the data load operation is complete.
   - The piano returns to step 4 of the above procedure after the "Complete" message clears from the display.
   - Repeat steps 4 through 8 if you want to load more data.
   - You can quit diskette operations at any time during the above operation by pressing the DISK button so the indicator lamp above it goes out.

**❚NOTES❚**
- When loading registration memory data or all data, simply skip step 6 of the above procedure.
- To exit the disk operation screens at any time during the above procedure, press the DISK button so the indicator lamp above it goes out.
- If an error occurs while data saved to a diskette by a Save All operation is being loaded back into piano memory, user rhythms, Song Sequencer data, and registration memory data that was in memory when the load operation started will all be deleted.

CURSOR

DISK

ENTER — [+]/[–]
(YES/NO)
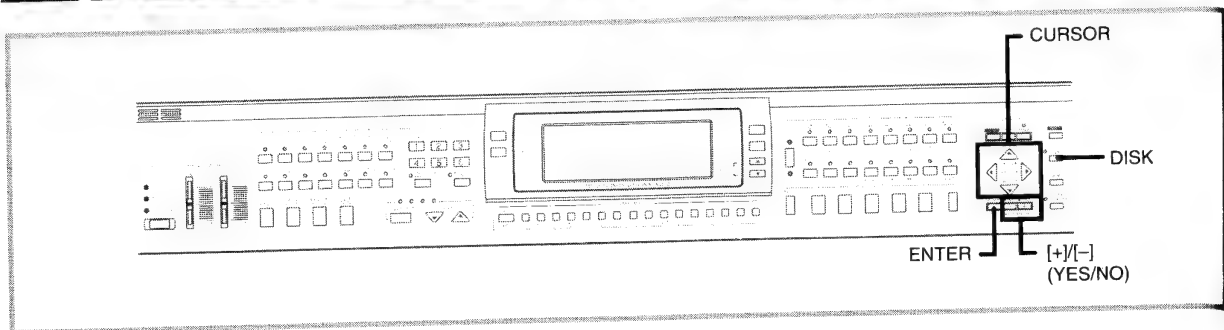
## Using the Utilities

This section describes the utilities that are provided to convert rhythm pattern data from another keyboard, to delete data from a diskette, and to format a diskette.

### Converting Rhythm Pattern Data From Another Keyboard

Use the procedure described here to convert rhythm pattern data created on a Technics, or Roland brand keyboard so it can be used on the piano.

=== **IMPORTANT!** ===

- The data conversion capabilities of this piano are intended for personal, non-commercial purposes only.
- The sound source and accompaniment system of this piano is different from those used by other manufacturers, so converted data played on this piano may sound different from what it sounds like when played on its equipment.
- You may not be able to convert some accompaniment patterns created on other keyboards.
- Please direct all inquiries concerning accompaniment pattern conversion to CASIO COMPUTER CO., LTD.

**❚ NOTES ❚**
- Data can be converted one files at a time.
- Converted data is stored in the user rhythm area of this piano's memory.

#### To convert rhythm data

Before getting started…
- Prepare the diskette labeled "DISK-1", which comes with the piano.
- Prepare the diskette that contains the rhythm pattern data you want to convert.
- Eject and remove any diskette currently in the piano's disk drive.
- Make sure there is a user rhythm number available to store the converted data.

1. Press the **DISK button** twice.
   - This displays the first disk operation screen.

2. Press the [▼] **CURSOR key** three times to display the "Utility" screen.

3. Use the [ ◀ ] and [ ▶ ] **CURSOR keys** to display the "PtnConv" (pattern conversion) screen.

4. Press the **ENTER button**.
   - This causes a data type selection screen to appear on the display.

**[on Type=Tec**
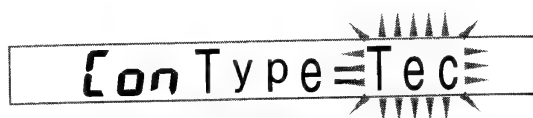
| Display | Manufacturer Name |
|---------|-------------------|
| Tec     | Technics          |
| Rol     | Roland            |

5. Use the [+] and [–] **buttons** to display the indicator for the type of data you are converting from, and then press the **ENTER button**.
   - The following shows the display indicator for each data type.

**[on InsConFD**
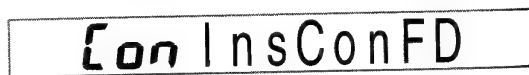
6. Insert the "DISK-1" into the disk drive of the piano, and then press the **ENTER button**.
   - The message "Pls Wait" appears, followed by the message shown below.

**[on ChgPtnFD**
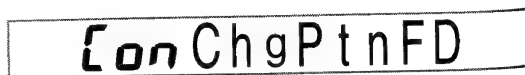
7. Eject and remove the "DISK-1" and insert the diskette that contains the data you want to convert. Next, press the **ENTER button**.
   - Inserting the data disk causes the message "Select" to appear on the display for about one second. Next the name of one of the files on the disk appears.

8. Use the [+] and [–] **buttons** to display the name of the file you want to convert, and then press the **ENTER button**.

9. Specify the file characteristics.
   - File characteristic depend on the type of data you are converting. See "File Characteristics" on page E-69 for details on how to set file characteristics for each type of data.
   - The conversion starts as soon as you specify the file characteristics. The message "Pls Wait" indicates that conversion is being performed.

10. Specify the user rhythm number where you want to store the converted data.
    - Use the [+] and [–] buttons to specify a number.

*11.* Press the **ENTER button** to load the converted data.
- If the rhythm number you specify already contains data, the message "Replace?" appears, asking if you want to replace the existing data with the converted data. Press the YES button to replace the existing data, or the NO button to return to step 10 of this procedure.

*12.* The message "Complete" appears when the conversion is complete. Next, the message "Continue?" appears to ask if you want to convert more data.
- Press the YES button if you want to convert more data from the same manufacturer, or the NO button to return to step 3 of this procedure.
- To exit the procedure, press the DISK button so the indicator lamp above it goes out.

**❚ NOTE ❚**

To exit the above procedure at any time, press the DISK button so the indicator lamp above it goes out.

## File Characteristics

Use the following procedures to specify the file characteristics for each type of data during the rhythm data conversion procedure. These steps should be performed for step 9 of the procedure under "Converting Rhythm Pattern Data From Another Keyboard" on page E-68.

### (A) To specify Technics file characteristics

*1.* Use the **[+]** and **[–] buttons** to specify Bank A, B, or C, and then press the **ENTER button**.

$$\boxed{\textbf{\textit{Con}} \ \text{B a n k} = \text{A}}$$

*2.* Use the **[+]** and **[–] buttons** to specify Area 0 or 1, and then press the **ENTER button**.

$$\boxed{\textbf{\textit{Con}} \ \text{A r e a} = \text{0}}$$

### (B) To specify Roland file characteristics

*1.* Use the **[+]** and **[–] buttons** to select either basic (B) or advanced (A) and the chord type (M, m, 7th). Various combinations are available, so scroll through the selections until you find the one you want, and then press the **ENTER button**.

$$\boxed{\textbf{\textit{Con}} \ \text{M o d e} = \text{B} - \text{M}}$$

*2.* Use the **[+]** and **[–] buttons** to specify one of the three available conversion processes, and then press the **ENTER button**.

$$\boxed{\textbf{\textit{Con}} \ \text{P r o c e s} = \text{0}}$$

## To delete a file from a diskette

=== **IMPORTANT!** ===

The file delete operation cannot be undone. Make sure you no longer need a file before you delete it.

*1.* Insert the diskette that contains the file you want to delete into the piano's disk drive. At this time close the diskette's write protect tab to enable writing.

*2.* Press the **DISK button** twice.
- This causes the "Option" disk operation screen to appear on the display. The indicator lamp above the DISK button flashes at this time.

*3.* Press the **[▼] CURSOR key** three times to display the "Utility" screen.

*4.* Use the **[ ◄ ]** and **[ ► ] CURSOR keys** to display the "FileDel" (file delete) screen, and then press the **ENTER button**.
- This causes a file name to appear on the screen as shown below.

File name

$$\boxed{\textbf{\textit{dEL}} \ \text{T U N E 1} \atop \textit{C 5 2}}$$

File name extension

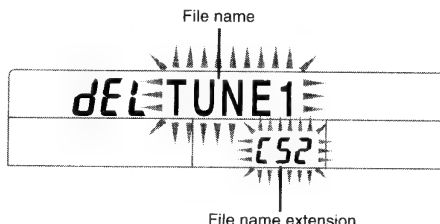*5.* Use the **[+]** and **[–] buttons** to display the name of the file you want to delete, and then press the **ENTER button**.
- The message "Sure?" appears on the display to confirm whether or not you really want to delete the file.

*6.* Press the **YES button** to delete the file or the **NO button** to abort the operation without deleting anything.
- After the file is deleted, the message "Complete" appears on the display for about one second. Then the piano returns to step 4 of the above procedure.

**❚ NOTES ❚**
- To exit the above procedure at any time, press the DISK button so the indicator lamp above it goes out.
- This piano cannot delete an SMF from a disk.
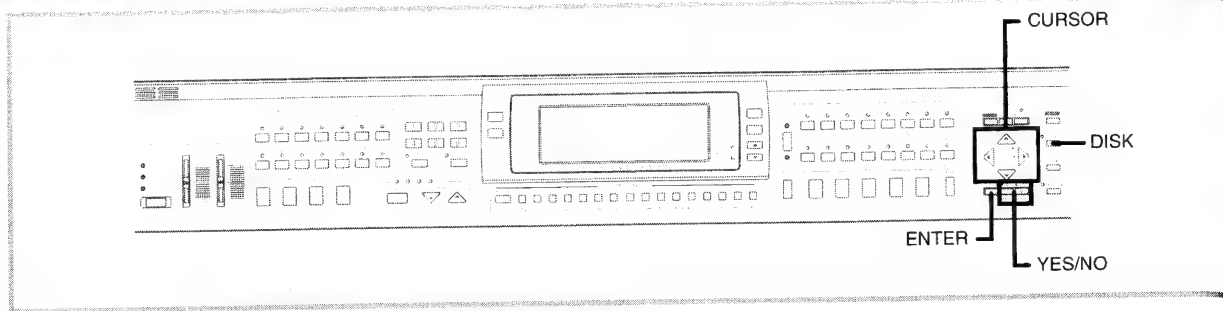
## To format a floppy diskette

=========== **IMPORTANT!** ===========

Formatting a diskette that contains data deletes the data. Make sure you no longer need any data that may be on a diskette before you format it.

1. Press the **DISK button** twice.
   - This causes the "Option" disk operation screen to appear on the display. The indicator lamp above the DISK button flashes at this time.

2. Press the **[▼] CURSOR key** three times to display the "Utility" screen.

3. Use the **[◄]** and **[►] CURSOR keys** to display the "Format" screen, and then press the **ENTER button**.
   - This causes the message "Insert FD" to appear, prompting you to insert the diskette you want to format into the disk drive.

4. Insert the diskette that you want to format into the piano's disk drive, and then press the **ENTER button**.
   - The message "Sure?" appears on the display to confirm whether or not you really want to format the diskette.

5. Press the **YES button** to format the diskette or the **NO button** to abort the operation.
   - The message "Pls Wait" remains on the display while the format operation is being performed.
   - After the diskette is formatted, the message "Complete" appears on the display for about one second. Then the piano returns to step 3 of the above procedure.

**▌ NOTES ▌**
- To exit the above procedure at any time, press the DISK button so the indicator lamp above it goes out.
- A diskette formatted by MS-DOS or Windows can be used as it is on the piano. Diskettes formatted for other types of computers are not compatible.

## What is MIDI?

The letters MIDI stand for Musical Instrument Digital Interface, which is the name of a worldwide standard for digital signals and connectors that makes it possible to exchange musical data between musical instruments and computers (machines) produced by different manufacturers. MIDI compatible equipment can exchange keyboard key press, key release, tone change, and other data as messages.

Though you do not need any special knowledge about MIDI to use this piano as a stand-alone unit, MIDI operations require a bit of specialized knowledge. This section provides you with an overview of MIDI that will help to get you going.

## MIDI Connections

MIDI messages are send out through the MIDI OUT terminal of one machine to the MIDI IN terminal of another machine over a MIDI cable. To send a message from this piano to another machine, for example, you must use a MIDI cable to connect the MIDI OUT terminal of this piano to the MIDI IN terminal of the other machine. To send MIDI messages back to this piano, you need to use a MIDI cable to connect the other machine's MIDI OUT terminal to the MIDI IN terminal of this piano.

To use a computer or other MIDI device to record and playback the MIDI data produced by this piano, you must connect the MIDI IN and MIDI OUT terminals of both machines in order send and receive data.



MIDI IN  MIDI OUT          MIDI IN   MIDI OUT

AP-60R                    Computer etc.
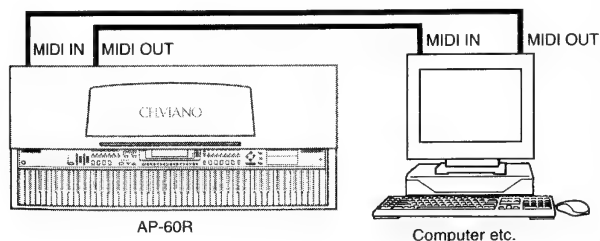
## MIDI Channels

MIDI allows you to send the data for multiple parts at the same time, with each part being sent over a separate MIDI channel. There are 16 MIDI channels, numbered 1 through 16, and MIDI channel data is always included whenever you exchange data (key press, pedal operation, etc.)

This piano is equipped with multi-timbre capabilities, which means it can receive messages over all 16 MIDI channels and play up to 16 parts at the same time.

Keyboard and pedal operations performed on this piano are sent out by selecting a MIDI channel (1 to 16) and then sending the appropriate message.

## General MIDI

As we have already seen, MIDI makes is possible to exchange musical data between devices produced by different manufacturers. This musical data does not consist of the notes themselves, but rather information on whether a keyboard key is pressed or released, and the tone number.

If tone number 1 on a keyboard produced by Company A is PIANO while tone number 1 on a Company B's keyboard is BASS, for example, sending data from Company A's keyboard to Company B's keyboard produces a result entirely different from the original. If a computer, sequencer or other device with auto accompaniment capabilities is used to produce music data for the Company A keyboard which has 16 parts (16 channels) and then that data is sent to the Company B keyboard which can receive only 10 parts (10 channels), the parts that cannot be played will not be heard.

The standard for the tone numbering sequence, the number of parts, and other general factors that determine the sound source configuration, which was arrived at by mutual consultations by manufacturers, is called General MIDI.

The General MIDI standard defines the tone numbering sequence, the drum sound numbering sequence, the number of MIDI channels that can be used, and other general factors that determine the sound source configuration. Because of this, musical data produced on a General MIDI sound source can be played back using similar tones and identical nuances as the original, even when played on another manufacturers sound source.

This piano conforms with General MIDI standards, so it can be connected to a computer or other device and used to play back General MIDI data that has been purchased, downloaded from the Internet, or obtained from any other source.

## Making MIDI Settings

This section describes the MIDI settings you need to make when connecting this piano to a sequencer, synthesizer, or other external device. Once connected, you can send and receive data, and even play back commercially available General MIDI data.

## MIDI Settings

### GM ON

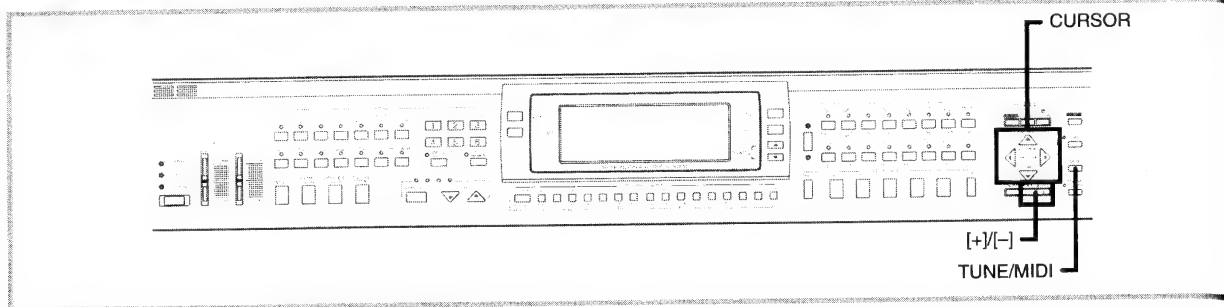Pressing the [+] button while this screen is on the display sends a GM ON message from the MIDI terminal and initializes the Mixer's external channel.

$$\boxed{\text{GM On?}}$$

### KEYBOARD CHANNEL (Default: 01)

This parameter sets the channel for MIDI messages to an external device. You can set any MIDI channel in the range of 01 to 16 as the keyboard channel.

$$\boxed{\text{01 Keybd Ch}}$$

CURSOR

[+]/[−]

TUNE/MIDI

### MIDI IN CHORD JUDGE ON/OFF (Default: oFF)

Use MIDI IN CHORD JUDGE when you want to use note data received from an external device through MIDI IN to play chords. It comes in handy when you want to control Auto Accompaniment chord progressions from a computer or other external device.



**on:** Turns MIDI IN CHORD JUDGE on, which allows chord settings to be made using keyboard channel note data input through the MIDI IN terminal when the chord fingering method is selected by the MODE button.

**oFF:** Turns MIDI IN CHORD JUDGE off.

### LOCAL CONTROL (Default: on)

This setting determines whether or not the keyboard and sound source of this piano are connected internally. When recording to a computer or other external device connected to this piano's MIDI IN/OUT terminal, it helps if you turn LOCAL CONTROL off.



**on:** Anything played on the keyboard is sounded by the internal sound source and simultaneously output as a MIDI message from the MIDI OUT terminal.

**oFF:** Anything played on the keyboard is output as a MIDI message from the MIDI OUT terminal, without being sounded by the internal sound source. Turn LOCAL CONTROL off whenever you are using the MIDI THRU function of a computer or other external device. Also note that no sound is produced by the keyboard if LOCAL CONTROL is turned off and no external device is connected.



MIDI THRU    MIDI IN

MIDI OUT

MIDI OUT
MIDI IN

Sound Source
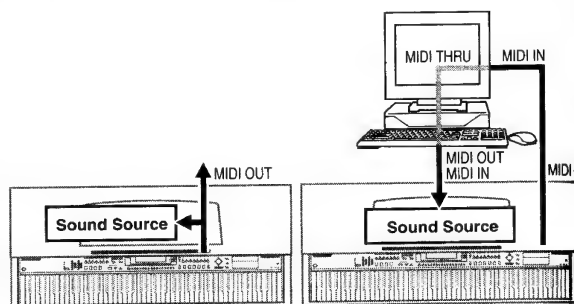
Sound Source

**LOCAL CONTROL On**
Notes played on this piano's keyboard are sounded by the internal sound source and output as MIDI messages from the MIDI OUT terminal.

**LOCAL CONTROL Off**
Notes played on the keyboard are output as MIDI messages from the MIDI OUT terminal, but not sounded directly by the internal sound source. The MIDI THRU terminal of the connected device can be used to return the MIDI message and sound it on this piano's sound source.

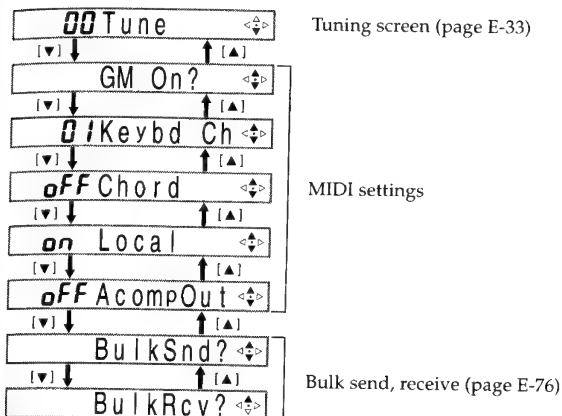### ACCOMP MIDI OUT (Default: oFF)



**on:** Auto Accompaniment is played by this piano and the corresponding MIDI message is output from the MIDI OUT terminal.

**oFF:** Auto Accompaniment MIDI messages are not output from the MIDI OUT terminal.

## To make MIDI settings on the piano

*1.* Press the **TUNE/MIDI button**.

*2.* Use the **[▲]** and **[▼] CURSOR keys** to display the MIDI screen for the setting you want to make, as shown in the next page.

```
┌──────────────────────┐
│ 00 Tune          ◁♦▷ │  Tuning screen (page E-33)
└──────────────────────┘
 [▼]↓        ↑[▲]
┌──────────────────────┐
│    GM On?        ◁♦▷ │
└──────────────────────┘
 [▼]↓        ↑[▲]
┌──────────────────────┐
│ 01 Keybd Ch  ◁♦▷     │
└──────────────────────┘
 [▼]↓        ↑[▲]
┌──────────────────────┐
│ oFF Chord        ◁♦▷ │  MIDI settings
└──────────────────────┘
 [▼]↓        ↑[▲]
┌──────────────────────┐
│ on  Local        ◁♦▷ │
└──────────────────────┘
 [▼]↓        ↑[▲]
┌──────────────────────┐
│ oFF AcompOut  ◁♦▷    │
└──────────────────────┘
 [▼]↓        ↑[▲]
┌──────────────────────┐
│    BulkSnd?  ◁♦▷     │
└──────────────────────┘  Bulk send, receive (page E-76)
 [▼]↓        ↑[▲]
┌──────────────────────┐
│    BulkRcv?  ◁♦▷     │
└──────────────────────┘
```

*3.* Use the **[+]** and **[–] buttons** to change the setting.
- Settings you make are applied even if you do not press the ENTER button.
- Pressing the [+] button while the "GM On?" message is displayed sends a GM ON message from the MIDI terminal and initializes the Mixer's external channel.

*4.* Press the **TUNE/MIDI button** to clear the setting screen. The setting screen also clears automatically if you do not perform any operation for about five seconds.

# MIDI Messages

There is a wide variety of messages defined under the MIDI standard. This section details the particular messages that can be sent and received by this piano. An asterisk (✶) is used to mark messages that affect the entire keyboard, while messages without an asterisk are those that affect only a particular channel.

## NOTE ON/OFF

This message sends data when a key is pressed (NOTE ON) or released (NOTE OFF).
A NOTE ON/OFF message includes a note number (to indicate the note whose key is being pressed or released) and velocity (keyboard pressure as a value from 1 to 127). NOTE ON velocity is always used to determine the relative strength of the note. This piano does not receive NOTE OFF velocity data.
Pressing a keyboard key sends the corresponding NOTE ON message from the MIDI OUT terminal, while releasing the key sends the corresponding NOTE OFF message.
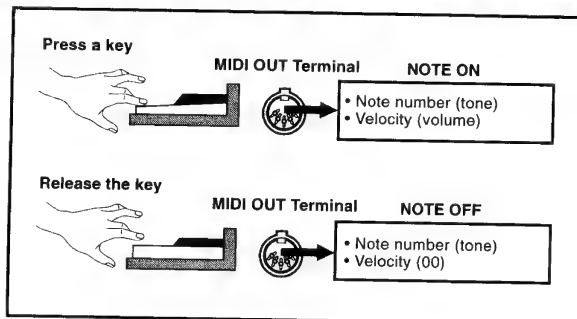


**❚ NOTE ❚**

The pitch of a note depends on the tone that is being used, as shown in the "Tone List" on page A-1. Whenever this piano receives a note number that is outside its range for that tone, the same tone in the nearest available octave is substituted.

## PROGRAM CHANGE

This is the tone select message. PROGRAM CHANGE can contain tone data within the range of 0 to 127.
A PROGRAM CHANGE message is sent out through this piano's MIDI OUT terminal whenever you manually change its tone number. Receipt of a PROGRAM CHANGE message from an external device changes the tone setting of this piano.

## PITCH BEND

This message carries pitch bend information for sliding pitch upwards or downwards during keyboard play.

## CONTROL CHANGE

This message adds effects such as vibrato and volume changes. CONTROL CHANGE data includes a control number (to identify the effect type) and a control value (to specify the on/off status and depth of the effect).
The following is a list of data that can be send or received using CONTROL CHANGE.

| Effect | Control Number |
|---|---|
| BANK SELECT✶1 | 0 / 32 |
| Modulation | 1 |
| Volume | 7 |
| Pan | 10 |
| Expression | 11 |
| Hold1 | 64 |
| Sostenuto | 66 |
| Soft Pedal | 67 |
| Effect depth | 91 |
| RPN✶2 | 100 / 101 |
| Data Entry | 6 / 38 |

*1 The BANK SELECT setting of PROGRAM CHANGE can be used to access any of this piano's 232 tones when selecting tones on this piano from an external device. The 232 tones are divided between four banks, as described below.

Bank 0: 128 General MIDI tones (PROGRAM CHANGE 0 to 127)
Bank 1: 64 variation tones (PROGRAM CHANGE 0 to 63)
Bank 2: 8 drum sets (PROGRAM CHANGE 0 to 7)
Bank 3: 32 TONE buttons tones (PROGRAM CHANGE 0 to 31)

Immediately prior to sending the PROGRAM CHANGE message, send two successive CONTROL CHANGE messages containing the following data.
CONTROL NUMBER=0 CONTROL VALUE=<bank number>
CONTROL NUMBER=32 CONTROL VALUE= 0

### ∎ NOTE ∎
Data received by the sound source of this piano over MIDI Channel 10 is always treated as drum set data, and can be sounded using the eight drum set sounds only. Because of this, PROGRAM CHANGE 0 through 7 always corresponds to drum set tones, so BANK SELECT data is not necessary when PROGRAM CHANGE is received over channel 10.

*2 "RPN" stands for "Registered Parameter Number", which is a special control change number used when combining multiple control changes. The parameter being controlled is selected using the control values of control numbers 100 and 101, and then settings are made using the control values of DATA ENTRY (control numbers 6 and 38).
This piano supports pitch bend sense, coarse tune, and fine tune RPNs sent from other MIDI machines.

### ∎ NOTE ∎
Damper (CONTROL NUMBER 64), sostenuto (CONTROL NUMBER 66), and soft (CONTROL NUMBER 67) effects applied using the foot pedal can also be sent and received.

### ALL SOUND OFF

This message forces all sound being produced over the current channel to stop.

### ALL NOTES OFF

This message causes all notes being produced over the current channel due to NOTE ON messages to stop. This message is valid only for MIDI data notes.

### RESET ALL CONTROLLERS

This messages initializes pitch bend and all other control changes.

## SYSTEM EXCLUSIVE*

This message is used to control system exclusives, which are fine adjustments that are unique to a particular MIDI device. Originally, system exclusives were unique to a particular model, but now there are also universal system exclusives that are applicable to machines that are different models and even produced by different manufacturers. The following are the system exclusive messages supported by this piano.

### GM ON ([F0] [7E] [7F] [09] [01] [F7])

This message initializes the Mixer's external channel.

### GM OFF ([F0] [7E] [7F] [09] [02] [F7])

With this piano, receipt of this message performs the same operation as GM ON.

- GM ON takes more time to process than other messages, so it can take more than 100 msec until the next message is processed.

### EFFECT CHANGE ([F0] [44] [0B] [09] [XX] [F7])

EFFECT CHANGE switches between the piano's internal digital effects. The "XX" parameter in the syntax shown above stands for a hexadecimal value that represents an effect number sent from an external machine. A list of the hexadecimal values that can be specified and their meanings is shown below.

| Effect Number | Digital Effect | Hex. Value |
|---------------|----------------|------------|
| 0 | REVERB 1 | 00 |
| 1 | REVERB 2 | 01 |
| 2 | REVERB 3 | 02 |
| 3 | CHORUS | 03 |
| 4 | TREMOLO | 04 |
| 5 | PHASE SHIFTER | 05 |
| 6 | ORGAN SPEAKER | 06 |
| 7 | ENHANCER | 07 |
| 8 | FLANGER | 08 |
| 9 | EQ LOUDNESS | 09 |
| oFF | OFF | 0F |

# MIDI Functions and Mixer Functions

As explained under "Mixer Modes" on page E-39, this piano has a total of 32 channels: 16 internal channels and 16 external channels. Of these, you can use the external channels to play notes on the keyboard in accordance with received MIDI data and select tones. Internal channel settings have no affect on MIDI receive data.
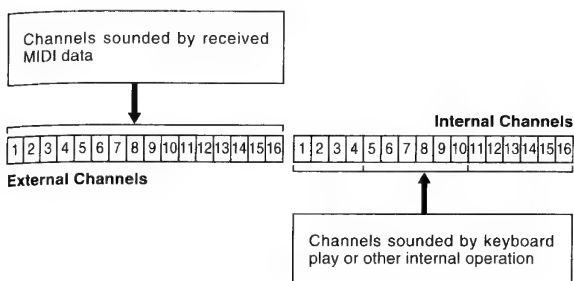


The Mixer can be used in combination with MIDI functions to perform a variety of operations. The following examples show how to use each Mixer mode for controlling MIDI send and receive operations.

**∎ NOTE ∎**

The following examples assume that you are already familiar with Mixer operations, especially how to change and use the Mixer modes. If you aren't, see "Mixer Function" on page E-39 for details.
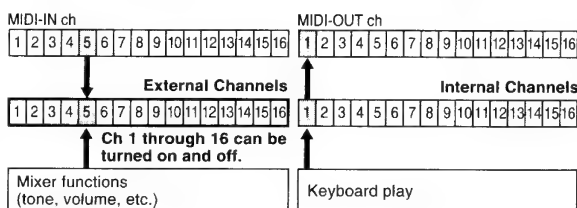
## Internal Mode
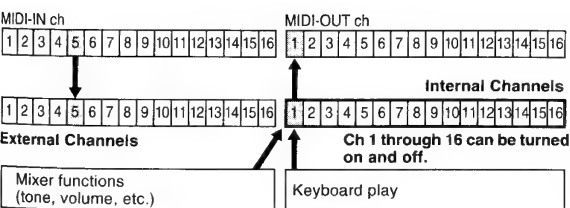


In the Internal Mode, Mixer settings (channel on/off, volume, and other settings) are affected by internal channel settings only. MIDI input can be controlled using the external channels only, so the Mixer can be used without affecting MIDI input. Because of this, the Internal Mode is best for the following type of application.

- When you want to use the multi-timbre capabilities of the piano's sound source to play along on the keyboard with playback of external MIDI data, and make separate settings for the keyboard notes. You can use the Internal Mode to change the tone, layer, split and other settings for keyboard play, without affecting MIDI input.

## External Mode



In the External Mode, Mixer functions affect the external channels, so they also have a direct affect on the corresponding MIDI input channels. Because of this, the External Mode is best for the following types of applications.

- To control MIDI input channel on/off settings. The CH1 through CH16 CHANNEL buttons correspond to MIDI channels 1 through 16, so channels can be toggled on and off by pressing the corresponding button.
- You can use the Mixer to change the tone and volume for each channel, and to make a variety of other settings. See "Changing the Parameters of a Channel" on page E-40.

**∎ NOTES ∎**

- All settings except for Channel on/off are changed at the next MIDI message receive after the setting is made.
- Though you can play on the keyboard without affecting MIDI input as with the Internal Mode, you cannot change keyboard settings. Except for when a channel other than the current channel is selected, you can change the main tone setting using the standard tone selection procedure shown under "Selecting a Tone" on page E-20.
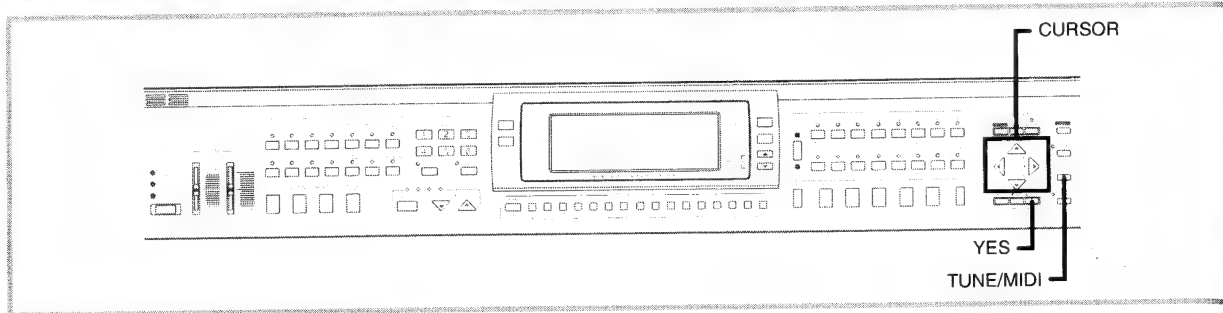
## Bulk Sending Piano Data

This piano stores a variety of internal data, including data recorded with the sequencers. This data can be sent and received in bulk as MIDI exclusive data through the MIDI terminals. This capability makes it possible for you use a computer or other MIDI machine as an external storage device for your data.

Before performing the following procedures, you must first connect this piano's MIDI IN and MIDI OUT terminals to an external machine using MIDI cables.

**∎ NOTES ∎**
- Some software does not support MIDI exclusive data.
- This piano does not support bulk data transfer with another musical instrument.

### To bulk send data from the piano to an external device

1. Set up the other device by putting it in its receive standby mode.
   - See the documentation that comes with the other device for details.

2. Press the **TUNE/MIDI button**.

3. Press the **[▼] CURSOR key** to display the bulk send screen.

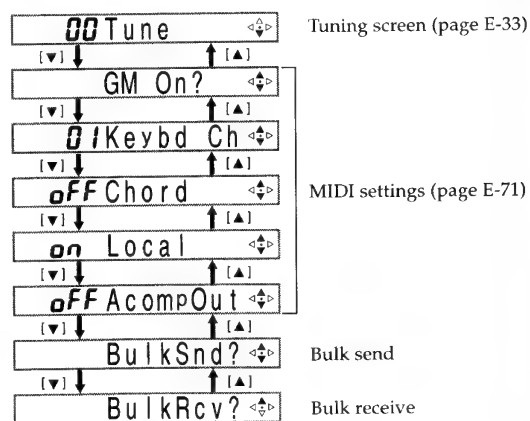$$\boxed{\text{BulkSnd?} \;\triangleleft\,\hat{\updownarrow}\,\triangleright}$$

4. Press the **YES button** to start the bulk send operation.
   - The bulk send screen is automatically cleared from the display of the piano after the operation is complete.

### To bulk import data from another device with the piano

1. Press the **TUNE/MIDI button**.

2. Press the **[▼] CURSOR key** to display the bulk receive screen.

$$\boxed{\text{BulkRcv?} \;\triangleleft\,\hat{\updownarrow}\,\triangleright}$$

3. Press the **YES button** to enter bulk receive standby.

4. Perform the bulk send operation on the other device.
   - See the documentation that comes with the other device for details.
   - The bulk receive screen is automatically cleared from the display of the piano after the operation is complete.

| Display | Description |
|---|---|
| **00** Tune  ◁⇕▷ | Tuning screen (page E-33) |
| [▼]↓  ↑[▲] | |
| GM On?  ◁⇕▷ | |
| [▼]↓  ↑[▲] | |
| **0**1Keybd Ch ◁⇕▷ | |
| [▼]↓  ↑[▲] | |
| oFFChord  ◁⇕▷ | MIDI settings (page E-71) |
| [▼]↓  ↑[▲] | |
| on Local  ◁⇕▷ | |
| [▼]↓  ↑[▲] | |
| oFFAcompOut ◁⇕▷ | |
| [▼]↓  ↑[▲] | |
| BulkSnd? ◁⇕▷ | Bulk send |
| [▼]↓  ↑[▲] | |
| BulkRcv? ◁⇕▷ | Bulk receive |

# Reference

# Troubleshooting

| Problem | Possible Cause | Action | See page |
|---|---|---|---|
| No sound when keyboard keys are pressed. | 1. Power is not turned on.<br><br>2. MAIN VOLUME setting is too low.<br><br>3. Playing in the accompaniment keyboard area while the MODE button setting is CASIO CHORD or FINGERED.<br>4. LOCAL CONTROL is off.<br>5. Mixer Channel 1 is off.<br>6. Mixer Channel 1 volume or expression setting is too low. | 1. Press the POWER button to turn on power.<br>2. Use the MAIN VOLUME slider to increase volume.<br>3. None of the accompaniment mode indicators are lit, which means Auto Accompaniment is turned off.<br><br>4. Turn LOCAL CONTROL on.<br>5. Turn on Mixer Channel 1.<br>6. Use the Mixer to raise the volume or expression setting for channel 1. | Page E-20<br><br>Page E-20<br><br>Page E-24<br><br><br><br>Page E-72<br>Page E-40<br>Page E-40 |
| Auto Accompaniment does not sound. | 1. The ACCOMP VOLUME slider is set to "MIN".<br>2. Auto Accompaniment part Channels 6 through 10 are turned off.<br>3. Auto Accompaniment part Channels 6 through 10 volume or expression setting is too low. | 1. Slide the ACCOMP VOLUME slider towards "MAX".<br>2. Use the Mixer to turn the channels on.<br>3. Use the Mixer to raise the volume or expression setting for the applicable channel. | Page E-28<br><br>Page E-40<br><br>Page E-40 |
| Pedal effect continues to be applied even though pedals are not pressed. | Problem with the connection between the pedals and piano. | Turn off piano power and then check to make sure that the pedal plug is securely connected to the piano's pedal connector. | Page E-84 |
| No sound produced by demo tune play. | 1. MAIN VOLUME slider set to MIN.<br><br>2. Headphones connected to the piano. | 1. Move MAIN VOLUME slider more towards the MAX side.<br>2. Disconnect the headphones from the piano. | Page E-20<br><br>Page E-18 |
| Memory contents deleted. | Lithium battery is dead. | Contact your CASIO Service Provider for replacement of the lithium battery. | Page E-6 |
| Sound output does not change when key pressure is varied. | Touch response is turned off. | Press the TOUCH RESPONSE button to turn it on. | Page E-32 |
| The key or tuning does not match when playing along with another MIDI machine. | The tuning or transpose parameter is set to a value other than 00. | Change the transpose or tuning parameter value to 00. | Page E-33 |
| Some parts stop playing at some point during Sequencer playback. | Playback exceeds the maximum polyphony of the piano. | Use the Song Sequencer to decrease the number of parts playing at the same time by turning off channels. | Page E-49 |
| Some parts don't play at all during Sequencer playback. | 1. The Mixer mode setting for the corresponding channel is off.<br>2. Volume or expression setting is too low. | 1. Use the Mixer to make sure that channels are turned on.<br>2. Use the Mixer to check the volume or expression setting. | Page E-40<br><br>Page E-40 |
| Cannot record Auto Accompaniment or rhythm. | Track other than Track 1 is selected as the recording track. Tracks 2 through 6 are melody tracks. | Use the track select buttons to select Track 1. | Pages E-45, 46 |
| Nothing happens when the LAYER or SPLIT button is pressed. | 1. One or more of the melody channels (2 through 4) is turned off.<br>2. The volume or expression setting of one or more of the melody channels (2 through 4) is too low. | 1. Use the Mixer to turn on Channels 2 through 4.<br>2. Use the Mixer to raise the volume or expression setting of Channels 2 through 4. | Page E-40<br><br>Page E-40 |

| Problem | Possible Cause | Action | See page |
|---------|----------------|--------|----------|
| No sound is produced when playing MIDI data from a computer. | 1. MIDI cables are not connected properly.<br>2. Channel is turned off, or volume or expression setting is too low. | 1. Connect MIDI cables properly.<br><br>2. Use the Mixer to turn the channel on, or raise the volume or expression setting. | Page E-71<br><br>Page E-40 |
| Playing on the keyboard produces an unnatural sound when connected to a computer. | The computer's MIDI THRU function is turned on. | Turn off the MIDI THRU function on the computer or turn off LOCAL CONTROL on the piano. | Page E-72 |
| Cannot record chord accompaniment data on a computer. | ACCOMP MIDI OUT is turned off. | Turn on ACCOMP MIDI OUT. | Page E-72 |

## Disk Drive Error Messages

| Message | Cause | Action |
|---|---|---|
| Err ReadOnly | Attempt to save a file using the same name as an existing file that is read only. | Save the new file to a different diskette or use another name. |
| Err Format | 1. The format of the diskette is not compatible with this piano.<br>2. The diskette is not formatted.<br>3. The diskette is damaged. | 1. Change to a diskette that has the proper format. ................................................................ E-63<br>2. Format the diskette. ........................................... E-70<br>3. Use a different diskette. |
| Err Disk R/W | The diskette is damaged. | Use a different diskette. |
| Err DiskFull | The diskette is full. | 1. Use a different diskette.<br>2. Delete any files you no longer need in order to make room for the data you want to save. ................. E-70 |
| Err Mem Full | Piano memory became full while importing data from diskette. | 1. If you have user patterns stored in Pattern Sequencer memory, use the following procedure to delete user patterns you no longer need from the user area (patterns 100 to 109).<br>  ① Clear the work area using the procedure under "Work Area Clear" on page E-58.<br>  ② While the work area empty (cleared), use the procedure under "To exit the Pattern Sequencer Mode and save work area contents" on page E-60 to save the work area to the accompaniment pattern user area accompaniment numbers that contain patterns you no longer need. Saving the empty work area effectively deletes data currently stored in memory.<br>2. If you have song data stored in Song Sequencer memory (SG0, SG1), delete the song data you no longer need. ........................................ E-50 |
| Err Not SMF0 | The file you are reading is not an SMF 0 format file. | Use SMF 0 format files only. ................................... E-65 |
| Err No Disk | 1. The diskette is not loaded in the drive correctly.<br>2. No diskette is loaded in the drive. | 1. Eject the diskette from the drive and reload it. ................................................................ E-64<br>2. Load a diskette into the drive. |
| Err No File | The piano cannot find any file it can read on the diskette. | Use a diskette that contains data stored by this piano or compatible data from another device. |
| Err Protect | The diskette is write protected. | 1. Use a different diskette.<br>2. Close the diskette's write protect hole to enable data storage. ..................................................... E-63 |
| Err Convert | The accompaniment pattern data you are trying to convert is of a type that cannot be converted by this piano. | Try converting other accompaniment pattern data. |
| Err WrongDat | The data on the diskette is corrupted. | Use other data or another diskette. |

# Specifications

All of the items in these specifications apply to the AP-60R, AP-60RV, AP-65R, and AP-65RV, unless specifically noted otherwise.

| | |
|---|---|
| **Models:** | AP-60R/AP-60RV/AP-65R/AP-65RV |
| **Keyboard:** | 88 piano keys (with touch response on/off; ExLight/Light/Normal/Heavy touch) |
| **Tones:** | 232 (128 General MIDI, 64 variation, 8 drum, 32 TONE button tones); with layer and split |
| **Rhythm Instrument Tones:** | 53 |
| **Polyphony:** | 32 notes maximum (16 for certain tones) |
| **Digital Effects:** | 10 (REVERB 1, 2, 3; CHORUS; TREMOLO; PHASE SHIFTER; ORGAN SPEAKER; ENHANCER; FLANGER; EQ LOUDNESS) |
| **Auto Accompaniment** | |
| Rhythm Patterns: | 78 (72 + 6 user rhythms) |
| Tempo: | Variable (226 steps, ♩ = 30 to 255) |
| Chords: | 3 fingering methods (CASIO CHORD, FINGERED, FULL RANGE CHORD) |
| Metronome: | 6 types |
| Rhythm Controller: | Start/Stop, Intro, Normal/Normal Fill-In, Variation/Variation Fill-In, Synchro/Ending |
| One Touch Presets: | Recalls settings for tone, tempo, layer, and Auto Harmonize in accordance with rhythm. |
| Auto Harmonize: | Automatic addition of notes that harmonize with melody note in accordance with specified Auto Accompaniment chords. |
| **Song Sequencer** | |
| Songs: | 2 |
| Recording Tracks: | 6 (2 through 6 are melody tracks) |
| Recording Method: | Real-time |
| Memory Capacity (total for two songs): | Approximately 4,900 notes |
| Punch In: | Supported |
| **Pattern Sequencer** | |
| Number of Patterns: | 6 |
| Memory Capacity: | Approximately 7,000 notes |
| Elements: | Intro, Normal, Variation, Normal Fill-In, Variation Fill-In, Ending |
| Parts: | Chord 1, 2, 3; Bass; Rhythm |
| Recording Method: | Real-time |
| **Registration Memory** | |
| Number of Setups: | 20 (5 setups x 4 banks) |
| Memory Contents: | Tone, Rhythm, Tempo, Split on/off, Split point, Layer on/off, Auto Harmonize on/off, Mixer settings, Keyboard channel on/off, Digital effect on/off, Digital effect settings, Accompaniment mode, Touch Response settings, Transpose, Tuning |
| **Demo Tunes:** | 12 |
| **Mixer** | |
| Channels: | 16 |
| Modes: | Internal, External |
| Parameters: | Program change number, volume, expression, pan, coarse tuning, fine tuning, Effect Send |
| **MIDI:** | 16-channel multi-timbre receive, General MIDI Level 1 |
| **Other Functions** | |
| Transpose: | 25 steps (–12 semitones to +12 semitones) |
| Tuning: | Adjustable (A4 = approximately 440Hz ±50 cents) |
| **Pedals:** | Damper, Soft, Sostenuto |
| **Floppy Disk Drive** | |
| Type: | 3.5" FDD |
| Formats: | 2DD (720KB MS-DOS format) |
| | 2HD (1.44MB MS-DOS format) |
| Functions: | Save and load of user rhythms, sequencer, and registration data; playback of SMF; disk formatting; file delete; accompaniment pattern style conversion |

| Input/Output: | • Headphones: Standard stereo jacks × 2 |
| --- | --- |
| | • LINE OUT (R)(L):     Standard monaural jacks × 2 |
| | Output impedance: 1.1 KΩ |
| | Output voltage: 3.5 V (RMS) MAX |
| | • LINE IN (R)(L):     Standard monaural jacks × 2 |
| | Input impedance: 32.0 KΩ |
| | Input voltage: 200 mV |
| | • MIDI (OUT) (IN) |
| Speakers: | ∅ 16.0cm × 2, ∅ 5.0cm × 2 (Output: 30.0 W + 30.0 W) |
| Power Supply: | AP-60R / AP-65R: 120V |
| | AP-60RV / AP-65RV: 220 - 240V |
| Power Consumption: | AP-60R / AP-65R: 91.0W |
| | AP-60RV / AP-65RV: 97.0W |
| Dimensions: | • CELVIANO (without stand): 137.6 × 59.2 × 21.9 cm (54 $^3/_{16}$ × 23 $^5/_{16}$ × 8 $^5/_8$ inch) |
| | • CELVIANO: 137.6 × 59.2 × 85.0 cm (54 $^3/_{16}$ × 23 $^5/_{16}$ × 33 $^1/_2$ inch) |
| Weight: | • CELVIANO (without stand): approximately 53.0 kg (117.0 lbs) |
| | • CELVIANO: approximately 66.0 kg (145.7 lbs) |

• *Design and specifications are subject to change without notice.*
• *AP-60R and AP-65R have hardwired power cords.*
• *AP-60RV and AP-65RV have detachable power cords.*

## ■ DEMO tune

| Tune Number | Title | Composer | Time |
| --- | --- | --- | --- |
| 1 | Main Theme (Original) | TECH-NOTE INTERNATIONAL LTD. | 2′13″ |
| 2 | Etude Op10-Nr12 | F. Chopin | 2′32″ |
| 3 | Lullaby of Birdland | G. Sherring | 2′18″ |
| 4 | Piano Sonata op.31 no.2 "Tempest" 3rd movement | L. Beethoven | 2′00″ |
| 5 | Quick Tapper (Original) | TECH-NOTE INTERNATIONAL LTD. | 1′08″ |
| 6 | Wohltemperierte Klavier I Praeludium 3 | J.S. Bach | 1′20″ |
| 7 | I Could have danced all night | F. Loewe | 1′16″ |
| 8 | Libertango | A. Piazzolla | 1′35″ |
| 9 | Balloons on the Highway (Original) | Ed Alstrom | 1′25″ |
| 10 | "O mio babbino caro" from "Gianni Schicchi" | G. Puccini | 1′24″ |
| 11 | Someday My Prince will come | F. Churchill | 1′37″ |
| 12 | Brazileira from "Scaramouche" | D. Milhaud | 2′10″ |

# Assembly Instructions

## ⚠️ Caution

- Take particular care to avoid injury when installing legs and pedals, and when mounting the piano onto the stand.
- When assembling, make sure that the sliding keyboard cover of the piano body is completely closed. If the cover is left open during assembly, it may close suddenly causing the fingers to be pinched between the piano body and cover.

## IMPORTANT!

- Be sure to assemble the stand on a flat surface.
- This stand does not include any of the tools required to assemble it. You should have a large Phillips head (+) screwdriver on hand for assembly.

### Figure 1
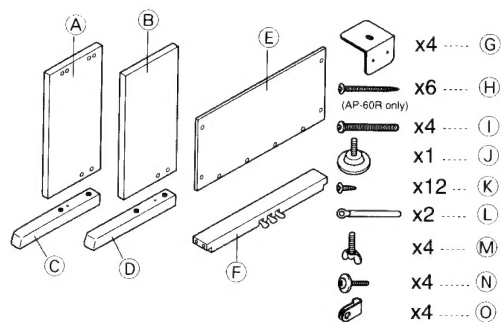


x4 ····· Ⓖ
x6 ····· Ⓗ (AP-60R only)
x4 ····· Ⓘ
x1 ····· Ⓙ
x12 ··· Ⓚ
x2 ····· Ⓛ
x4 ····· Ⓜ
x4 ····· Ⓝ
x4 ····· Ⓞ

#### Attention AP-65R Owners

The AP-65R stand comes with its side uprights Ⓐ and Ⓑ already attached to footpieces Ⓒ and Ⓓ.

- Check the items that come with the unit to make sure that everything shown in Figure 1 (Ⓐ through Ⓞ) is included.
  All screws are in a plastic bag inside of the packing cardboard.
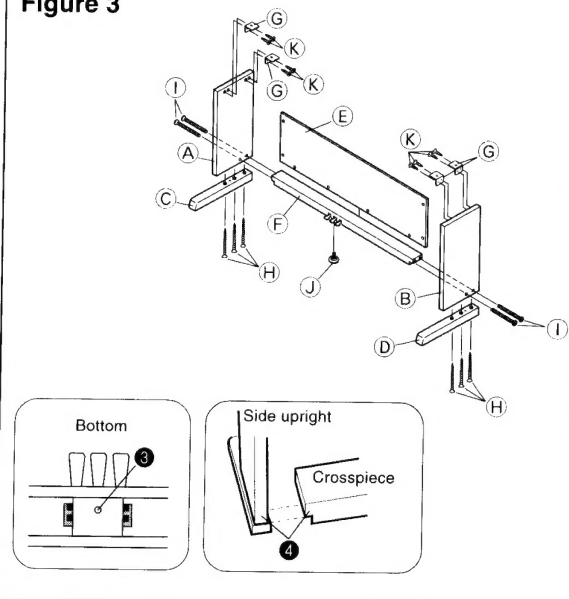
### Figure 2
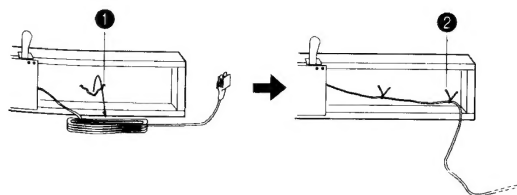


- Before starting actual assembly of the stand, undo the clip at location ❶ (Figure 2) where the pedal cable comes out the back of crosspiece Ⓕ. Pull out the coiled cable and refasten two clips at points ❶ and ❷ as shown in the illustration.

## 1 Assembling the stand

Refer to Figures 3, 4 and 5 as you assemble the stand according to the following procedure.

### Figure 3



Bottom    Side upright
                    Crosspiece

1. Attach side upright Ⓐ to footpiece Ⓒ, and side upright Ⓑ to footpiece Ⓓ using the Ⓗ screws. Also install the four angle brackets Ⓖ onto side uprights Ⓐ and Ⓑ using the Ⓚ screws. (Figure 3).

#### Attention AP-65R Owners

The AP-65R stand comes with its side uprights Ⓐ and Ⓑ already attached to footpieces Ⓒ and Ⓓ.

2. Install height adjustment screw Ⓙ into hole ❸ located in the center of the bottom of crosspiece Ⓕ (Figure 3).
3. Attach side uprights Ⓐ and Ⓑ to crosspiece Ⓕ using the four Ⓘ screws (Figure 3).
   - Make sure that crosspiece Ⓕ is correctly positioned as indicated by ❹ in the inset of Figure 3. It should be perpendicular (at a 90-degree angle) to the two side uprights. Also make sure that uprights Ⓐ and Ⓑ are parallel with each other. If the pieces are not positioned correctly, the nuts built into crosspiece Ⓕ will not seat properly with the Ⓘ screws. This can result in stripping of the threads and free turning of nuts.
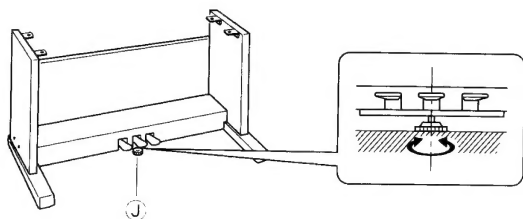
## Figure 4
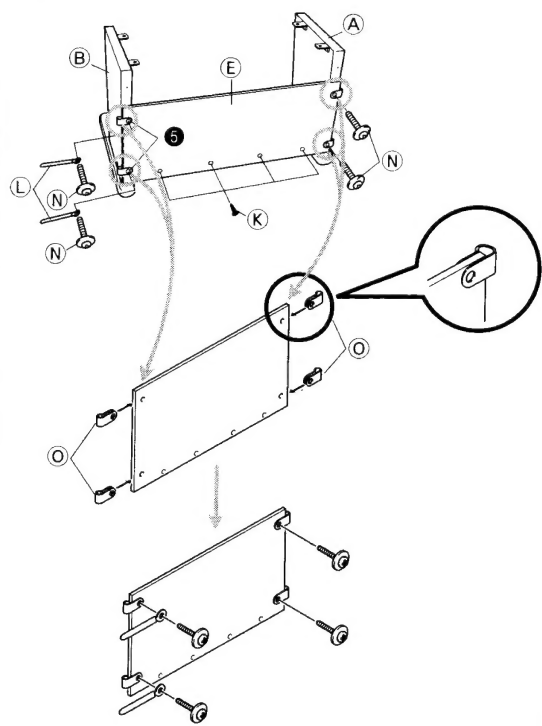


4. First, attach Ⓞ clips to the four locations on back panel Ⓔ. Install back panel Ⓔ onto the assembly made up of side uprights Ⓐ and Ⓑ, and crosspiece Ⓕ. Secure it in place with four Ⓚ screws and four Ⓝ screws. Also install the two Ⓛ clips and four Ⓝ screws (Figure 4).
   - Make sure that the rough surface of back panel Ⓔ is facing towards the back of the stand.
   - Start with the four Ⓝ screws on the left and right, and then install the other four Ⓚ screws. When installing the two screws marked ❺ in Figure 4, pass the screws through the holes in the Ⓛ clips and then screw the screws into place on the stand.

## Figure 5



5. Rotate height adjustment screw Ⓙ until it supports crosspiece Ⓕ, preventing the crosspiece from bending when you press the pedals (Figure 5).

=== **IMPORTANT!** ===

Be sure to install adjustment screw Ⓙ and perform the adjustment procedure described above before depressing the pedals. Failure do so can result in damage to crosspiece Ⓕ.
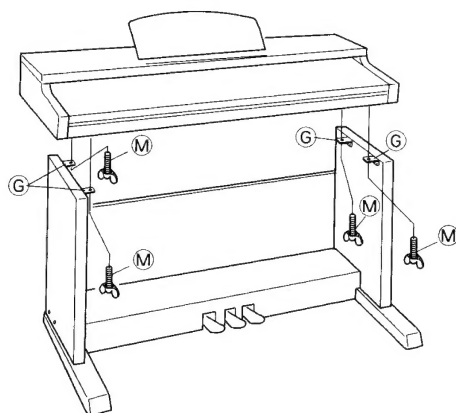
## ❷ Installing the Keyboard onto the Stand

⚠ **Caution**

Take care that you do not pinch your fingers between the keyboard and stand!

## Figure 6



Be sure that you securely anchor the keyboard to the stand using the Ⓜ butterfly bolts (Figure 6).
- Position the keyboard so the two rubber feet on its bottom (at the two back corners) are behind (more towards the back of the stand than) the stand's two rear angle brackets Ⓖ. In this position, the bolt holes in the bottom of the piano will be correctly aligned with the bolt holes of the stand's angle brackets.
- The butterfly bolts keep the keyboard from falling from the stand. Be sure that you always secure the keyboard with the butterfly bolts.
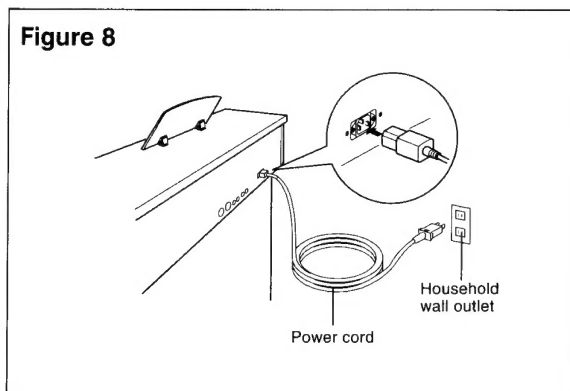
## ◼ 3 Connecting the Pedal ◼

### Figure 7
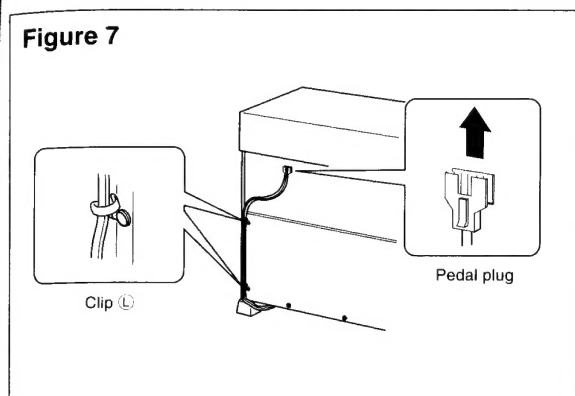


Clip Ⓛ

Pedal plug

Position the pedal plug as shown in Figure 7 and insert it into the pedal connector on the bottom of the piano. Secure the pedal cable to the upright of the stand using the Ⓛ clips that you installed when assembling the stand.

## ◼ 4 Connecting to a Power Supply ◼

### Figure 8



Household wall outlet

Power cord

1. Check to make sure that the piano's POWER button is in the OFF position. If it is ON, press the button to switch it OFF.
2. Attach the power cord that comes with the piano to the back of the piano.
3. Plug the piano's power cord into a wall outlet (Figure 8).

===== IMPORTANT! =====

* The shapes of the piano's power cord and wall outlet should be different according to countries or regions. The illustrations are examples.
* With some CELVIANO models, the power cord is hard-wired to the back of the instrument.

### ⚠ Caution

The screws that you use to assemble the stand may become loose after a long period due to changes in temperature and humidity, or vibration caused by normal use, etc. Periodically check the screws used to fasten the stand and the butterfly bolts used to fasten the stand and the piano, and tighten them whenever necessary.